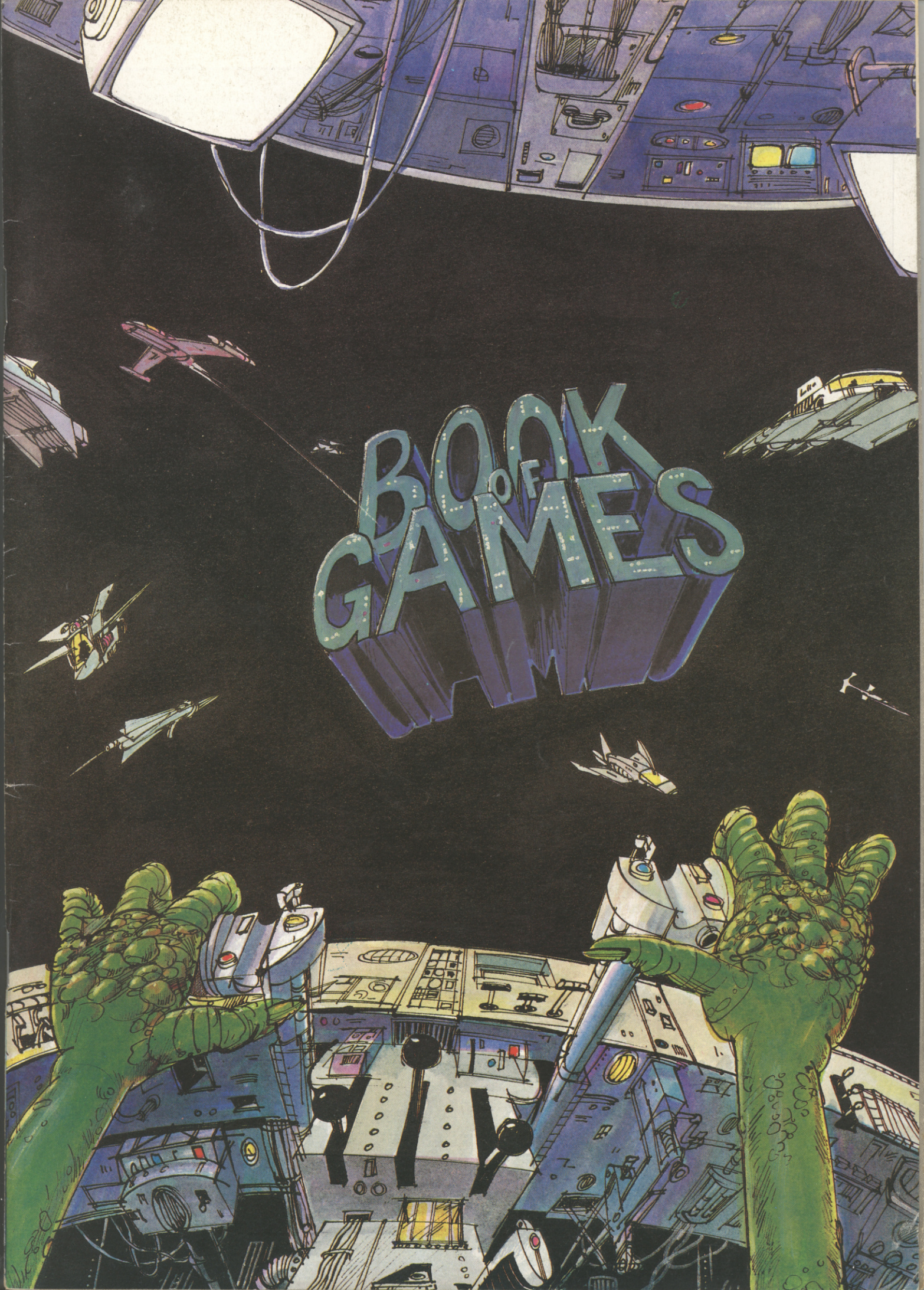
BOOK
OF
GAMES

THE BOOK OF GAMES CONTENTS

February 1984

Welcome to C&VG's Book of Games II! When we brought you the original Book of Games, featured in last year's February issue, it proved so popular that we almost ran out of magazines. You obviously liked it — so we decided to being you the pick of the games programs again this year. Inside you'll find all manner of weird and wonderful creatures which will take you on exciting journeys into worlds beyond your imagination!

All that and we've got prizes in store for you too! If you see the special C & VG's Competition Star at the top of the page then you'll know that the listing below it qualifies for our Book of Games Hi-Score Competition.

We've dipped into our software file and come up with top games tapes for the top five scorers on each of our selected listings. All you have to do is fill in the Book of Games Hi-Score coupon below, get somebody to witness it for you and send it to, Book of Games Hi-Scores, Computer and Video Games, Durrant House, 8 Herbal Hill, London EC1R 5EJ. Closing date for the competition is February 16th so hurry and get those entries in!

If you can manage to get us a screen shot to prove your hi-scoring activities that could help your chances too. We're afraid we can only accept one entry per coupon — so choose the game that you're best at!

We hope you'll enjoy playing the games we've chosen for you, but remember if you have any problems with listings in this Book of Games then contact the C & VG Bughunter at the above address and he'll attempt to help you out. But for now — play on!'

BOOK OF GAMES HI-SCORES

Name .....

Address .....

.....

Game ..... Score .....

Witness's signature .....

CHOPPER CHASE 3
Can you drop vital supplies to troops in the battlezone without getting zapped by the horrible homing missiles? A 1k wonder for the **ZX81.**

FOUR IN A LINE 4
Try making the right connection on your **Texas TI 99/4a** in this version of the popular board game.

ESCAPE .....
If you are too greedy you'll never get out of the money maze — but if you're quick enough you could make some extra cash on your way to the exit! Test your nerve on the **ZX81.**

TARGET 10
When they asked me if I was good with a bow and arrow I didn't think I'd end up bouncing around on a trampoline! You are quite welcome to take my place — if you've got an **Atari 400/800** that is.

BATTLE 12
Venture into a world of wickard wizards, scheming Kings and cunning jesters in this battle of wits for two players and a **Spectrum.**

CAVERN RAIDER 15
You have invaded the secret underground headquarters of a nasty bunch of evil aliens. Can you clear the cavern and survive? Space action on the **Sharp MZ80K.**

BLACKPOOL TOWER 17
The strangest adventures start in the most ordinary places — this one begins in your bedroom! Alternative adventuring on an **Oric-1.**

FRONT GUNNER 21
Patrolling the outer limits of Federation space, your battle cruiser is attacked by waves of creatures from beyond the galaxy. Can you defend your ship? Fast and furious fun on the **Electron.**

ZOMBIES 24
Are you cunning enough to outwit the hoardes of evil Zombies out for your blood? Find out on your **Vic-20.**

METEOR ATTACK 26
A bunch of unfriendly aliens have constructed a space platform in orbit around the Earth and they are dropping giant meteors on the planet! Stop them indulging in this anti-social habit with your **Texas TI 99/4a.**

FROGGA 27
What Book of Games would be complete without our little green pal? Help Frogga reach his home on your **ZX81.**

SNAKES 30
You have to be a really slippery customer to master Sid the Snake. Are you up to it? Practice your scales on the **Commodore 64.**

CAVERN BLAST 32
Meanwhile back in space . . . those aliens are up to their old tricks again. They have discovered your underground fortress and want to wipe it out. Beat off their attack with your **Spectrum.**

MILLIMAN 34
Who wants to be a millionaire? You all do! And now here's your chance. Max the Milliman will help you make a mint on your **Spectrum.**

WUMPUS 37
The Wumpus is a much sought after creature — even though it smells awful! Hunt it down on your **Vic-20.**

PSYCHO-CIRCUIT 43
Rev-up your **Atari** for an attack on the world speed record. But watch out for the rocks!

SHUTTLE 46
Can you carry vital supplies to the exploration team on a barren planet before their time runs out? Fly to the stars on your **BBC B.**

SIMON 47
Can you keep up with your computer? Find out with this game and your **BBC B.**

REACT 48
The nuclear reactor is going critical and only you can stop it! Only you and your **Texas TI 99/4a** that is.

CIRCUS 50
Welcome to the Big Top. We've got a great competition for you. Can you beat the bouncing balls and the clock? Roll up all you **Dragon** owners!

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GAME: CHOPPER CHASE

AUTHOR: W D BURNS

RUNS ON: A ZX81 IN 1K

You are a helicopter pilot in the thick of the action during a military exercise. Your job is to deliver vital supplies to a regiment behind enemy lines. You must drop the supplies bang on target otherwise the enemy will rush out and grab them. Each flight you make is worth ten points. The enemy has a heat-seeking missile which could cause you a few problems — unless you manage to avoid it. You must not fly too low as the chopper will crash. If you go off the screen, the mission is over. How many successful flights can you make? Remember, if you are among the top five scorers on this game you'll be on line for a prize in our grand Book of Games top scores competition. All you have to do is cut out the coupon on the contents page, fill in your score and get it witnessed and then send it in to us at C & VG. If you win, we'll send you some games tapes for your ZX81. Happy landings!

```
10 PAUSE 200
20 LET S=0
30 LET A=INT (RND*10)*2
40 LET B=1
50 LET C=B
60 LET D=A
70 PRINT AT A,B;"-----"
80 PRINT AT A+1,B-1;"▙▄▄▄▟"
90 PRINT AT A+2,B;"L"
100 PRINT AT C,D;"*"
110 PRINT AT C,D;"*"
120 IF A=18 AND B=15 THEN LET S
=S+10
130 IF A=C AND B=D THEN GOTO 28
0
140 IF A=C AND B=D THEN PRINT S
;" RATIONS DELIVERED";K
150 IF A+2=22 THEN STOP
160 PRINT AT 20,15;"+"
170 LET B=B+2*(INKEY$="8")-2*(I
NKEY$="5")
180 LET A=A+2*(INKEY$="6")-2*(I
NKEY$="7")
190 IF C<A THEN LET C=C+1
200 IF C>A THEN LET C=C-1
210 IF C>A THEN LET C=C-1
220 IF D>B THEN LET D=D-1
230 IF D<B THEN LET D=D+1
240 CLS
250 IF A=22 THEN GOTO 270
260 GOTO 70
270 PRINT AT A+1,B-1;"*+*+*"
280 GOTO 140
```

GAME: FOUR IN A LINE

AUTHORS: ANDREW WHITWORTH & STUART BUNT

RUNS ON: A TEXAS T.1/99.

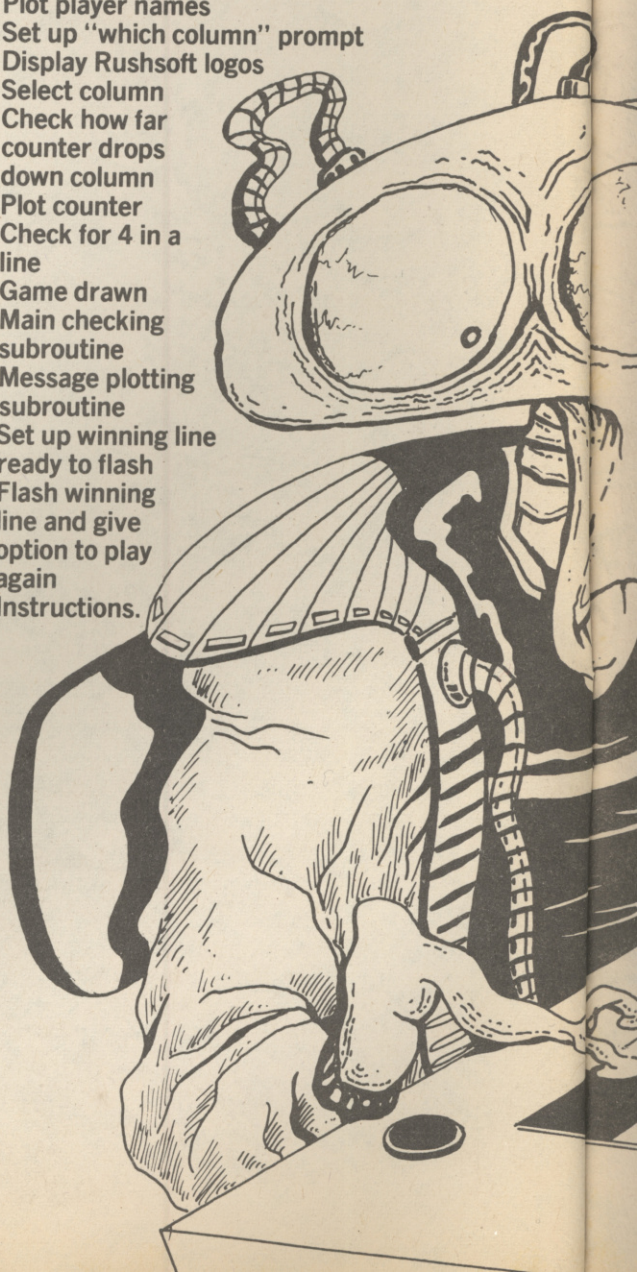
```
210 CALL CLEAR
220 FOR CH=96 TO 128 STEP 8
230 CALL CHAR(CH,"FFF8E0C0C08080
80")
240 CALL CHAR(CH+1,"FF1F07030301
0101")
250 CALL CHAR(CH+2,"808080C0C0E0
F8FF")
260 CALL CHAR(CH+3,"0101010303071
1FFF")
270 NEXT CH
280 CALL CHAR(42,"3C7EFFFFFFFF7E
3C")
290 CALL CHAR(64,"FFFF00FF00FFFF
00")
300 CALL CHAR(100,"FC828282FC908
884")
310 CALL CHAR(101,"FC8080FC04040
4FC")
320 CALL CHAR(136,"3C7EFFFFFFFF7
E3C")
330 PRINT "@@@@@@@@@@@@@@@@@@@@@@@@
@@@@@@@@
     DO YOU WANT INSTRUCTIONS"
340 PRINT "              (Y/N)

   @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@"
350 PRINT ::::::::
360 CALL KEY(0,K,ST)
370 IF ST=0 THEN 360
380 IF (K=89)+(K=121)THEN 1890
390 IF (K=78)+(K=110)THEN 400 EL
SE 360
400 FOR INP=1 TO 2
410 CALL CLEAR
420 PRINT "  NAME OF PLAYER";INP
;"  MAX 10 CHARS   -";
430 INPUT "":N$(INP)
440 IF LEN(N$(INP))>10 THEN 410
450 NEXT INP
460 CALL CLEAR
470 CALL SCREEN(16)
480 CALL COLOR(2,7,1)
490 CALL COLOR(9,5,1)
500 CALL COLOR(10,5,7)
510 CALL COLOR(11,5,4)
520 CALL COLOR(14,4,1)
530 FOR ROW=6 TO 16 STEP 2
540 FOR COL=9 TO 21 STEP 2
550 CALL HCHAR(ROW,COL,96)
560 CALL HCHAR(ROW,COL+1,97)
570 CALL HCHAR(ROW+1,COL,98)
580 CALL HCHAR(ROW+1,COL+1,99)
590 NEXT COL
```

This is a version of the well known Connect Four board game for two players. All the rules are included in the listing and will tell you everything you need to know about playing the game. But remember, when the computer asks you "which column", you press the key which corresponds to the column in which you want your counter to be placed. To place your counter in column three, simply press key three — and so on.

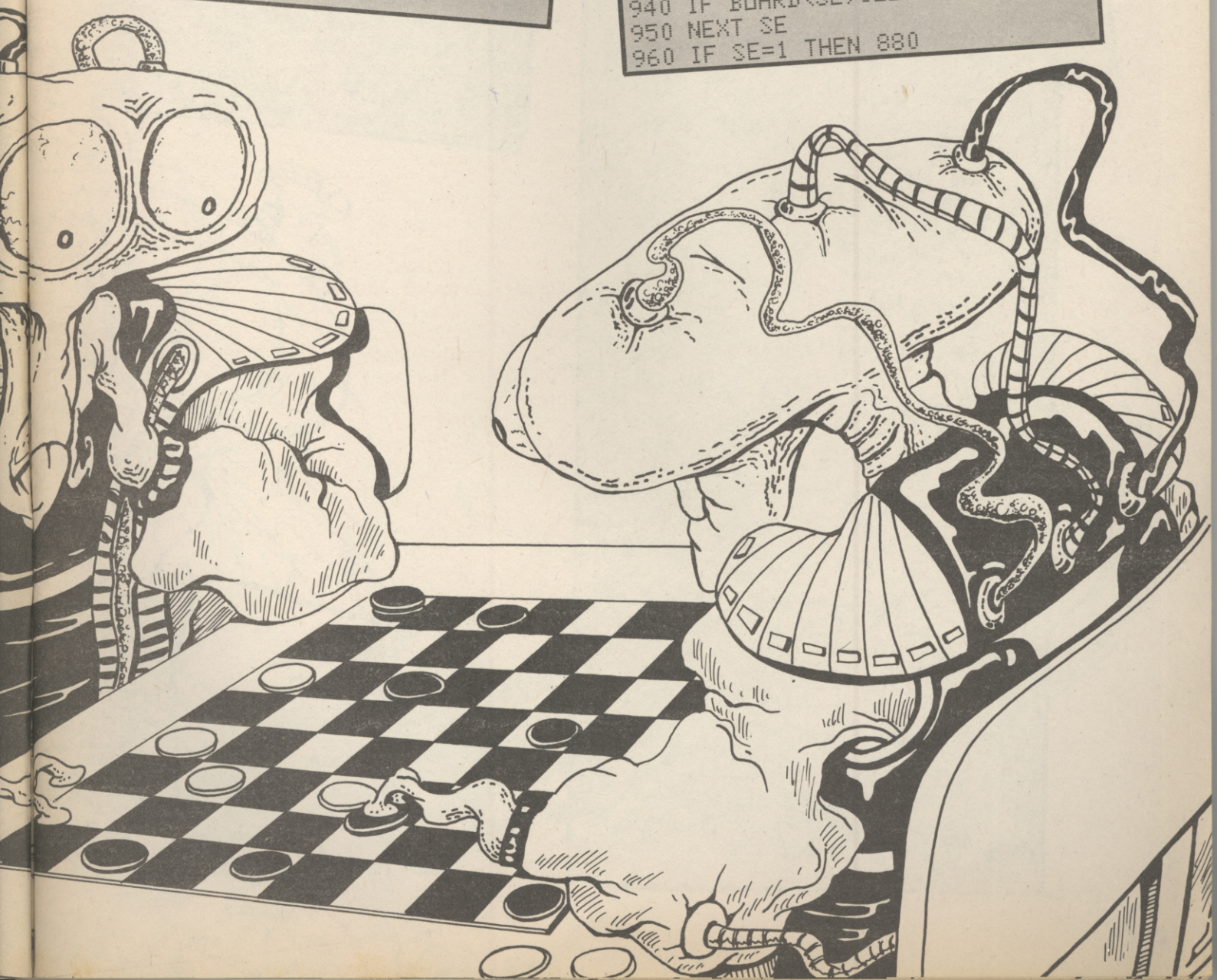
PROGRAM NOTES:

Lines	Function
210:	Clear screen
220- 270:	Define board characters
280- 320:	Define extra characters
330- 390:	Instructions option
400- 450:	Input names of players
460- 470:	Clear screen and set to white
480- 520:	Define graphic colours
530- 600:	Plot board
610- 660:	Dimension board away, put zero in each position to represent no piece present.
670- 690:	Plot column numbers
700- 740:	Plot player names
750- 780:	Set up "which column" prompt
790- 800:	Display Rushsoft logos
810- 920:	Select column
930- 960:	Check how far counter drops down column
970-1050:	Plot counter
1060-1190:	Check for 4 in a line
1200-1260:	Game drawn
1270-1430:	Main checking subroutine
1440-1540:	Message plotting subroutine
1550-1690:	Set up winning line ready to flash
1770-1880:	Flash winning line and give option to play again
1890-2000:	Instructions.



```
600 NEXT ROW
610 DIM BOARD(6,7)
620 FOR R=1 TO 6
630 FOR C=1 TO 7
640 BOARD(R,C)=0
650 NEXT C
660 NEXT R
670 FOR NM=1 TO 7
680 CALL HCHAR(18,8+NM*2,48+NM)
690 NEXT NM
700 L=13-LEN(N$(1))
710 ME$=N$(1)&"-"&CHR$(42)&"   "&
CHR$(136)&"-"&N$(2)
720 ROP=2
730 COP=L
740 GOSUB 1440
750 ME$="WHICH COLUMN - "
760 ROP=22
```

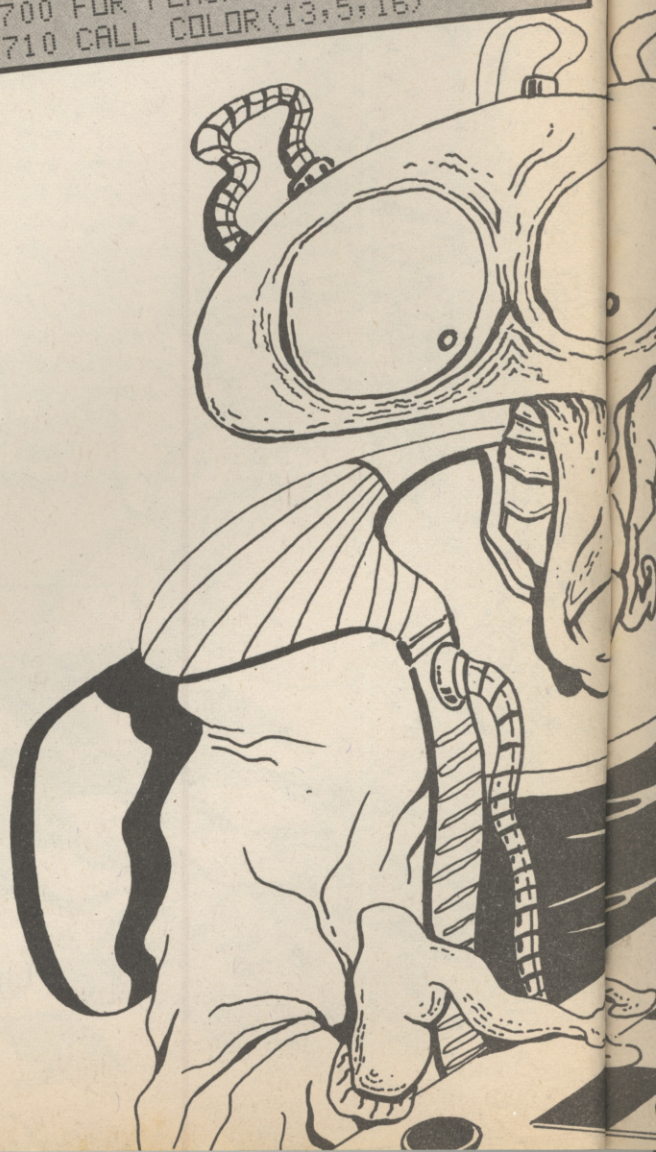
```
770 COP=3
780 GOSUB 1440
790 CALL HCHAR(10,28,100)
800 CALL HCHAR(10,29,101)
810 FOR MAIN=1 TO 21
820 FOR PL=1 TO 2
830 ME$=N$(PL)
840 ROP=22
850 COP=18
860 CALL HCHAR(22,18,32,10)
870 GOSUB 1440
880 CALL KEY(0,K,ST)
890 IF ST=0 THEN 880
900 CALL SOUND(100,1000,0)
910 IF (K<49)+(K>55)THEN 880
920 COL=K-48
930 FOR SE=1 TO 6
940 IF BOARD(SE,COL)<>0 THEN 960
950 NEXT SE
960 IF SE=1 THEN 880
```



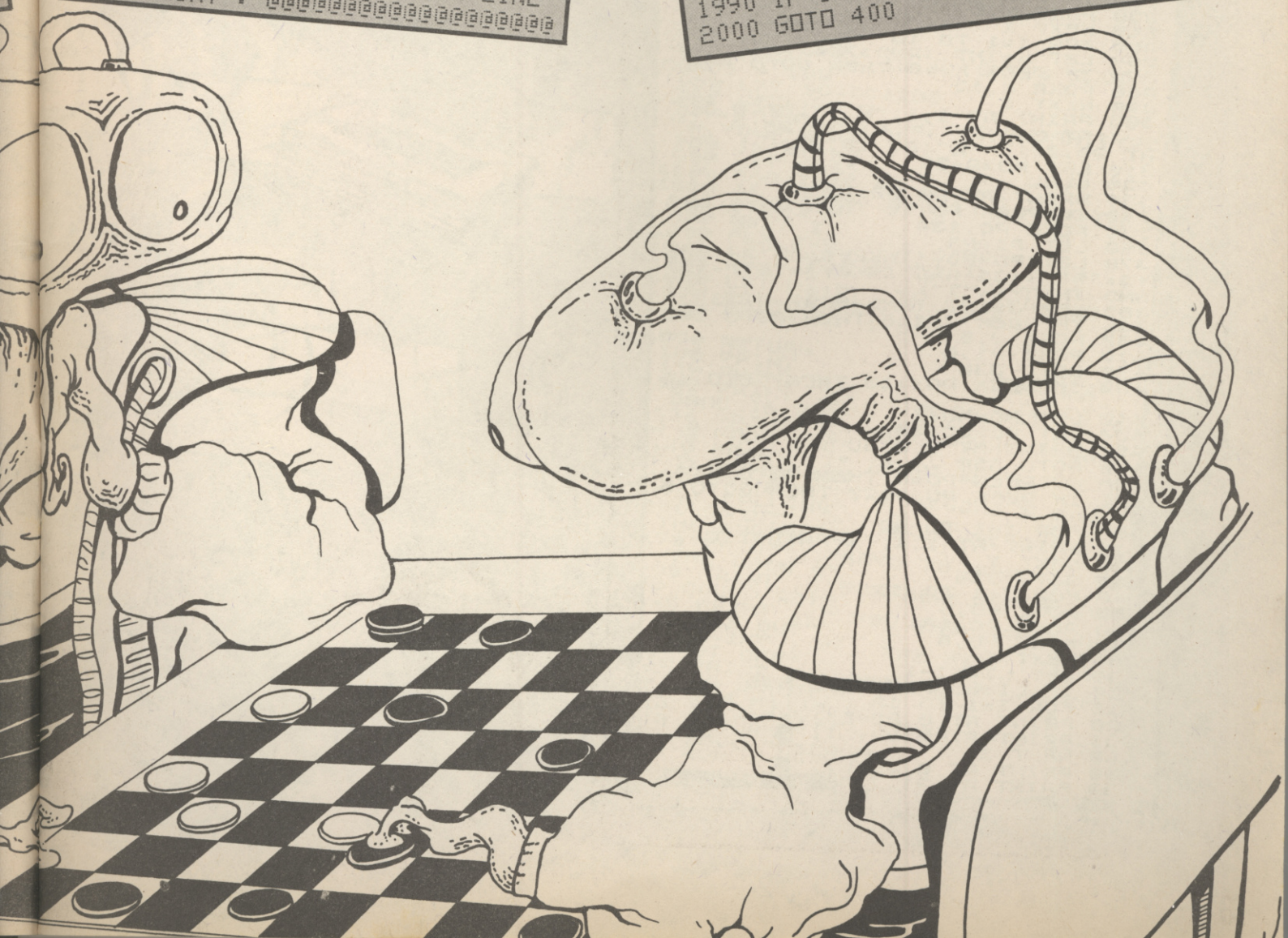
CONTINUED

```
970 CHA=96+8*PL
980 R=4+(SE-1)*2
990 C=COL*2+7
1000 CALL HCHAR(R,C,CHA)
1010 CALL HCHAR(R,C+1,CHA+1)
1020 CALL HCHAR(R+1,C,CHA+2)
1030 CALL HCHAR(R+1,C+1,CHA+3)
1040 V=SE-1
1050 BOARD(V,COL)=PL
1060 X=1
1070 Y=1
1080 GOSUB 1270
1090 X=0
1100 Y=1
1110 GOSUB 1270
1120 Y=0
1130 X=1
1140 GOSUB 1270
1150 Y=-1
1160 X=1
1170 GOSUB 1270
1180 NEXT PL
1190 NEXT MAIN
1200 ME$="   GAME DRAWN; PRESS A
NY KEY TO PLAY AGAIN"
1210 ROP=22
1220 COP=2
1230 CALL HCHAR(22,1,32,32)
1240 GOSUB 1440
1250 CLR=1
1260 GOTO 1850
1270 FL=0
1280 FOR RE=1 TO 2
1290 STX=COL
1300 STY=V
1310 FOR S=1 TO 4
1320 STY=STY+Y
1330 STX=STX+X
1340 IF (STX>7)+(STX<1)THEN 1400
1350 IF (STY>6)+(STY<1)THEN 1400
1360 IF BOARD(STY,STX)<>PL THEN
1400
1370 FL=FL+1
1380 IF FL=3 THEN 1550
1390 NEXT S
1400 X=-X
1410 Y=-Y
1420 NEXT RE
1430 RETURN
1440 OLDCOP=COP
1450 FOR PLOT=1 TO LEN(ME$)
1460 K=ASC(SEG$(ME$,PLOT,1))
1470 IF K<>59 THEN 1510
1480 ROP=ROP+1
```

```
1490 COP=OLDCOP
1500 GOTO 1530
1510 CALL HCHAR(ROP,COP,K)
1520 COP=COP+1
1530 NEXT PLOT
1540 RETURN
1550 IF PL=1 THEN 1580
1560 CLR=4
1570 GOTO 1590
1580 CLR=7
1590 CALL COLOR(13,5,CLR)
1600 FOR REP=1 TO 4
1610 C=7+STX*2
1620 R=4+STY*2
1630 CALL HCHAR(R,C,128)
1640 CALL HCHAR(R,C+1,129)
1650 CALL HCHAR(R+1,C,130)
1660 CALL HCHAR(R+1,C+1,131)
1670 STX=STX-X
1680 STY=STY-Y
1690 NEXT REP
1700 FOR FLASH=1 TO 20
1710 CALL COLOR(13,5,16)
```



```
1720 CALL SOUND(100,330,0)
1730 CALL COLOR(13,5,CLR)
1740 CALL SOUND(100,660,0)
1750 NEXT FLASH
1760 ROP=22
1770 COP=3
1780 ME$=N$(PL)&" IS THE WINNER;
PRESS ANY KEY TO PLAY AGAIN"
1790 CALL HCHAR(22,1,32,32)
1800 GOSUB 1440
1810 CALL COLOR(13,5,16)
1820 CALL SOUND(100,330,0)
1830 CALL COLOR(13,5,CLR)
1840 CALL SOUND(100,660,0)
1850 CALL KEY(0,K,S)
1860 IF S=0 THEN 1810
1870 CALL CLEAR
1880 GOTO 530
1890 CALL CLEAR
1900 PRINT "@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@@@@@@@@@":"          FOUR IN A LINE"
1910 PRINT :"@@@@@@@@@@@@@@@@@@@@@@@@@@@
@@@@@@@@@":
1920 PRINT :" THE SCREEN SET UP
SIMULATESA VERTICAL GAME BOARD W
HICH HAS SEVEN SLOTS AT THE TOP.
"
1930 PRINT " THE COUNTERS ARE DR
OPPED INTHE CHOSEN SLOTS AND COM
E TOREST WHEN THEY MEET EITHER"
1940 PRINT "ANOTHER COUNTER OR T
HE BASE OF THE BOARD."
1950 PRINT " THE WINNER IS THE F
IRST    PLAYER TO COMPLETE A LIN
E OFFOUR EITHER HORIZONTALLY,"
1960 PRINT "VERTICALLY OR DIAGON
ALLY."
1970 PRINT :"  (PRESS ANY KEY TO
 START)"::"@@@@@@@@@@@@@@@@@@@@@@@@@@@
@@@@@@@@"
1980 CALL KEY(0,K,ST)
1990 IF ST=0 THEN 1980
2000 GOTO 400
```



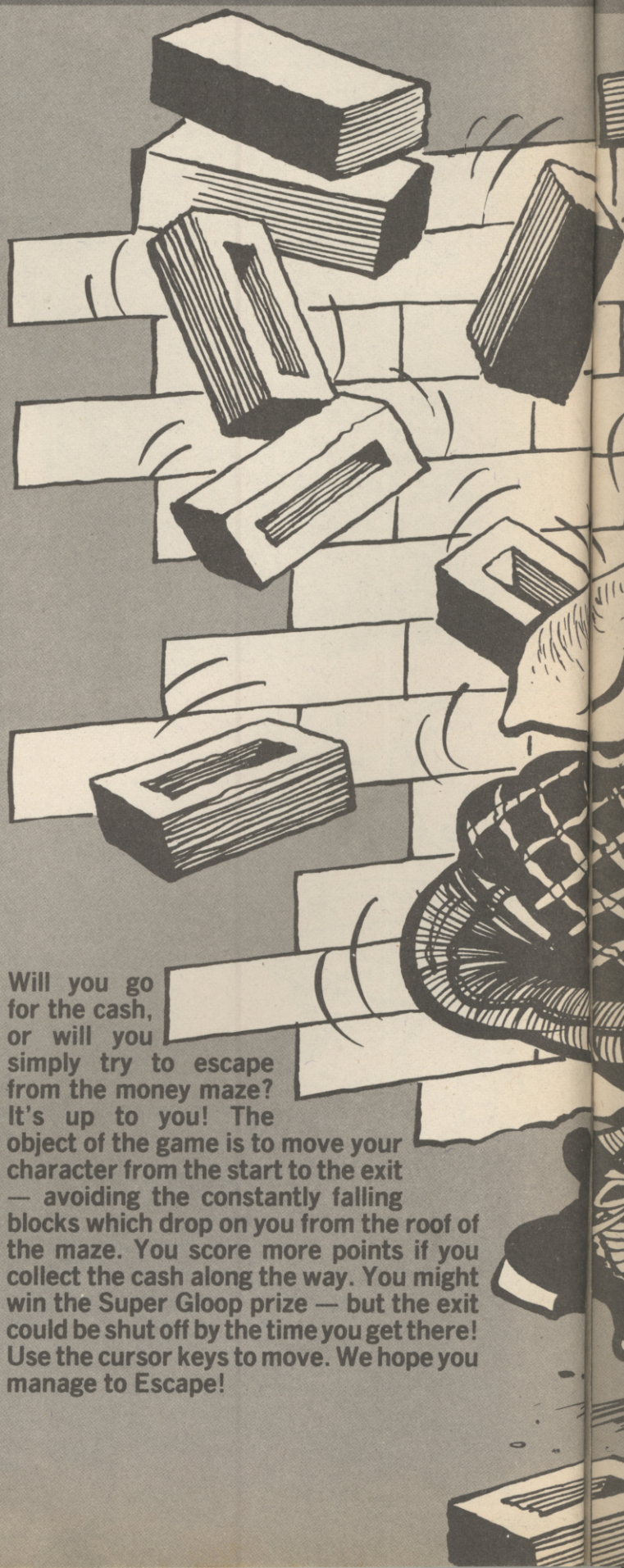
GAME: ESCAPE

AUTHOR: K THORN AND A WESTHEAD

RUNS ON: A ZX81 IN 16K

```
  0 REM          ESCAPE
        (C) 1983 DERF SOFTWARE
        ----------------------
        K.THORN AND A.WESTHEAD

  10 GOSUB 1100
  20 FOR I=1 TO 10
  30 LET H$(I)="0     DERF SOFTWA
RE"
  40 NEXT I
  50 LET SC=0
  60 LET LI=3
  70 LET SR=1
  80 FAST
  90 CLS
 100 LET A=1+PEEK 16396+256*PEEK
 16397
 110 LET NO=0
 120 PRINT "  SCORE          LIV
ES  "
 130 PRINT AT 0,8;SC
 140 PRINT AT 0,23;("■■" AND LI=
3);("■" AND LI=2)
 150 FOR I=1 TO 20
 160 POKE (I*33)+A,8
 170 POKE (I*33)+A+31,8
 180 NEXT I
 190 PRINT AT 21,0;"
                    "
 200 FOR I=1 TO 100
 210 LET K=INT (RND*724)+A
 220 IF PEEK K<>0 THEN GOTO 210
 230 POKE K,8
 240 NEXT I
 250 FOR I=1 TO 10
 260 LET K=INT (RND*724)+A
 270 IF PEEK K<>0 THEN GOTO 260
 280 POKE K,13
 290 NEXT I
 300 PRINT AT 1,1;"■  ";AT 2,1;"
   ";AT 3,1;"  ";AT 19,28;"  "
;AT 20,28;"  ■";AT 18,28;"  "
 310 LET PO=A+35
 320 SLOW
 330 PRINT AT 20,30;"■"
 340 IF PEEK PO<>0 THEN GOTO 430
 350 POKE PO,139
 360 LET P1=PO
 370 LET PO=PO+(INKEY$="8")-(INK
EY$="5")+(33 AND INKEY$="6")-(33
 AND INKEY$="7")
 380 LET J=INT (RND*659)+A+33
 390 IF PEEK J=118 THEN GOTO 380
 400 POKE J,8
 410 POKE P1,0
 420 GOTO 330
 430 IF PEEK PO<>13 THEN GOTO 48
0
 440 LET NO=NO+1
 450 LET SC=SC+10
 460 PRINT AT 0,8;SC
 470 GOTO 350
 480 IF PEEK PO=8 THEN GOTO 540
 490 IF PEEK PO<>173 THEN GOTO 5
40
 500 FOR I=1 TO 20
 510 PRINT AT I,I;"*FANTASTIC*"
 520 NEXT I
 530 GOTO 810
 540 FOR I=1 TO 50
 550 POKE PO,6
 560 POKE PO,134
 570 POKE PO,8
 580 NEXT I
 590 LET LI=LI-1
 600 IF LI=0 THEN GOTO 680
 610 FOR I=1 TO 10
 620 PRINT AT 0,22+LI;" "
 630 PRINT AT 0,22+LI;"■"
 640 NEXT I
 650 PRINT AT 0,22+LI;"■"
 660 PRINT AT 21,7;"
                    "
```



Will you go for the cash, or will you simply try to escape from the money maze? It's up to you! The object of the game is to move your character from the start to the exit — avoiding the constantly falling blocks which drop on you from the roof of the maze. You score more points if you collect the cash along the way. You might win the Super Gloop prize — but the exit could be shut off by the time you get there! Use the cursor keys to move. We hope you manage to Escape!

```
670 GOTO 300
680 FOR I=1 TO 20
690 PRINT AT I,1;"
                  "
700 NEXT I
710 PRINT AT 21,7;"
          "
720 IF SC>VAL H$(10)( TO 5) THE
N GOSUB 970
730 PRINT AT 2,12;"  ESCAPE"
740 PRINT AT 4,8;"FOR TEN HI-SC
ORES"
750 FOR I=1 TO 10
760 PRINT AT I+5,4;I;TAB 7;H$(I
)( TO 5);TAB 14;H$(I)(6 TO )
770 NEXT I
780 PRINT AT 17,5;"ANY KEY FOR
A NEW GAME"
790 IF INKEY$="" THEN GOTO 790
800 GOTO 50
810 FOR I=1 TO 20
820 NEXT I
830 FOR I=1 TO 20
840 PRINT AT I,1;"
                  "
850 NEXT I
860 PRINT AT 6,2;"WELL DONE.YOU
HAVE CLEARED "
870 PRINT AT 8,8;"SCREEN NUMBER
";SR
880 PRINT AT 10,10;"BONUS = ";S
R*10
890 IF NO=10 THEN GOSUB 940
900 LET SC=SC+(SR*10)
910 LET SR=SR+1
920 PAUSE 300
930 GOTO 80
940 PRINT AT 12,4;"SUPER GLOOP
BONUS = 100"
950 LET SC=SC+100
960 RETURN
970 PRINT AT 1,3;"HI-SCORE.TYPE
IN YOUR NAME"
980 INPUT N$
990 LET P=11
1000 FOR I=10 TO 1 STEP -1
1010 IF SC>VAL H$(I)( TO 5) THEN
 LET P=P-1
1020 NEXT I
1030 FOR I=9 TO P STEP -I
1040 LET H$(I+1)=H$(I)
1050 NEXT I
1060 LET H$(P)( TO 5)=STR$ SC
1070 LET H$(P)(6 TO )=N$
1080 PRINT AT 1,1;"
                  "
1090 RETURN
1100 PRINT "
1110 PRINT "                  ESCAPE"
1120 PRINT "                  ------"
E GAME IS TO"  THE OBJECT OF TH
1130 PRINT "ER  FROM THE" MOVE YOUR CHARACT
1140 PRINT "IT  AVOIDING" START  TO THE EX
1150 PRINT "ANTLY FALLING" THE BLOCKS  CONST
1160 PRINT "E THE CURSOR"  FROM THE ROOF.US
1170 PRINT "CT THE CASH $" KEYS TO MOVE.COLLE
1180 PRINT "EED COULD GET" FOR MORE POINTS.GR
1190 PRINT "OP BONUS BUT"  YOU THE SUPER GLO
1200 PRINT "BE SHUT OFF"   THE EXIT MIGHT
1210 PRINT "KEY TO BEGIN" GOOD LUCK AND ANY
1220 DIM H$(10,20)
1230 IF INKEY$="" THEN GOTO 1230
1240 RETURN
1250 SAVE "ESCAPE"
1260 RUN
```

GAME: TARGET

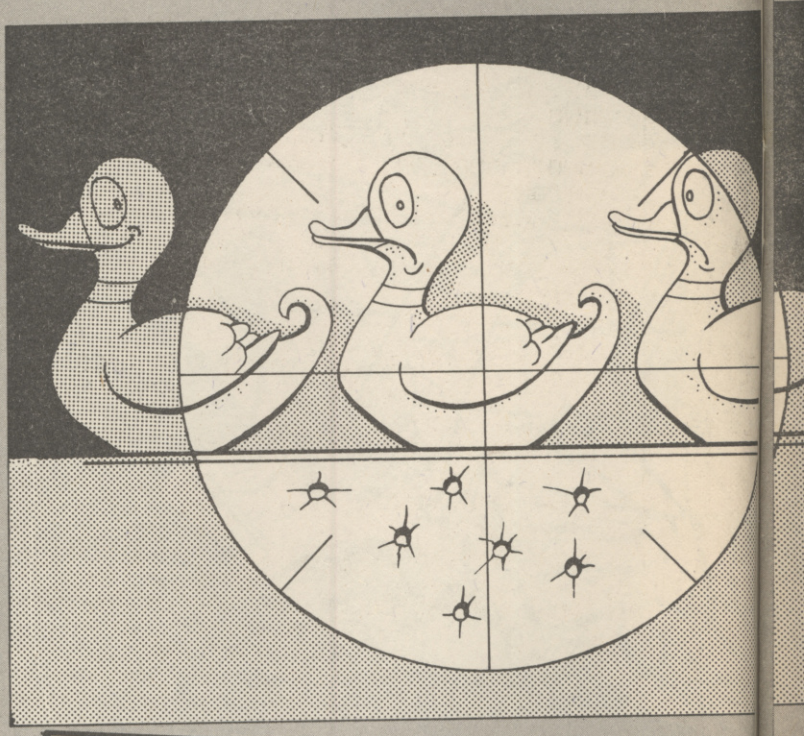
AUTHOR: KENNETH WOODWARD

RUNS ON: AN ATARI 400/800 IN 16K JOYSTICK OR KEYBOARD

Phew! When they asked me if I was any good with a bow and arrow I didn't think I would end up bouncing around on a trampoline. Well, you wouldn't would you! But that's just what I'm doing — bouncing up and down attempting to fire arrows at a target — and it's no easy task I can tell you! Once I've finished you are quite welcome to have a go. But I'd advise you to take a few seasick pills first!

The object of the game is to score as many points as possible by hitting the target with your arrows. You'll have to judge exactly the right moment to fire to get those big scores. You'll score 200 points if you hit the target's outer ring, 300 for the red ring, 100 for a hit on the inner ring and 500 for a bulls-eye. There are nine skill levels.

Amending lines 380 and 420 as below allows the keyboard space bar to fire missiles instead of the joystick button. 380/420: IF PEEK (764) = 33 THEN POKE 764, 255: POP: GOTO 460



```
10 REM ********TARGET**********
20 REM BY K.WOODWARD MARCH 1983
30 REM   TEL: (0495) 215222
40 GRAPHICS 5:POKE 710,0:A=PEEK(560)+256
*PEEK(561):POKE A+6,6
50 IF PEEK(A)<>66 THEN A=A+1:GOTO 50
60 POKE A,70:POKE A+3,6:POKE A+4,6:POKE
A+5,65:POKE A+6,PEEK(A+7):POKE A+7,PEEK(
A+8):REM CUSTOM SCREEN
70 POKE 87,1:POSITION 4,1:? #6;"PLEASE W
AIT":FOR W=1 TO 500:NEXT W
80 POKE 559,0:REM SCREEN OFF
90 GOSUB 630:REM DRAW TARGET
100 GOSUB 1110:REM V BLANK+PLAYERS
110 HIGH=0:WHERE=53253
120 REM
130 HITCLR=53278:SHOTS=10:LEVEL=0:SCORE=
0
140 POKE 87,1:POSITION 2,1:? #6;"select
level      "
150 POKE 704,216:POKE 705,0:REM PLAYER C
OL
160 POKE PLH,33:POKE PLH+1,15:POKE 53256
,0:REM PLAYER HEIGHT
170 POKE PLX,194:POKE PLY,30:REM PLAYER
0 INITIAL POS
180 POKE PLX+1,194:POKE PLY+1,30:REM PLA
YER 1 INITIAL POS
190 IF LEVEL>9 THEN LEVEL=0
200 POKE 87,1:POSITION 17,1:? #6;LEVEL
210 FOR W=1 TO 250:NEXT W
220 KEY=PEEK(53279):POKE KEY,8
230 IF KEY=3 THEN 1070:REM SHOW HIGH SCO
RE
240 IF KEY=6 THEN 280
250 SOUND 0,50,10,2:FOR W=1 TO 20:NEXT W
:SOUND 0,0,0,0
260 IF KEY=5 THEN LEVEL=LEVEL+1:SOUND 0,
20,10,8:FOR W=1 TO 5:NEXT W:SOUND 0,0,0,
0:GOTO 190
270 GOTO 220
280 TOTAL=0
290 ? "level=";LEVEL;" score=";SCORE
300 ? "shots=";SHOTS;" total=";TOTAL
310 ? " "
320 REM MOVE BOTH PLAYERS +
321 REM IF STRIG(0)=0 OR PEEK(764)=33 TH
EN POKE 764,255:POP :GOTO 460
330 REM
340 M=INT(2*RND(0))+LEVEL+1
350 POKE 77,0
360 FOR MOVE=31 TO 140 STEP M
370 POKE PLY,MOVE:POKE PLY+1,MOVE
380 IF STRIG(0)=0 THEN POP :GOTO 460
390 NEXT MOVE
400 M=INT(2*RND(0))+LEVEL+1
410 FOR MOVE=139 TO 30 STEP -M
420 IF STRIG(0)=0 THEN POP :GOTO 460
430 POKE PLY,MOVE:POKE PLY+1,MOVE
440 NEXT MOVE
450 GOTO 340
460 POKE 623,4:POKE 705,95:REM MISSILE F
IRED
470 FOR MISSILE=195 TO 55 STEP -4:POKE P
LX+1,MISSILE:POKE HITCLR,1:SOUND 0,4,0,2
:NEXT MISSILE:SOUND 0,0,0,0
480 FOR W=1 TO 3:SOUND 0,4,0,8:NEXT W:SO
UND 0,0,0,0:POKE 87,1:POSITION 2,1
490 IF PEEK(WHERE)=5 AND MOVE>56 AND MOV
E<98 THEN 1000:REM INNER RING
500 IF PEEK(WHERE)=7 THEN 880:REM BULLS
EYE
510 IF PEEK(WHERE)=4 OR PEEK(53253)=0 TH
```

```
EN 750:REM OFF TARGET
520 IF PEEK(WHERE)=5 THEN 830:REM OUTER
RING
530 IF PEEK(WHERE)=6 THEN GOTO 950:REM R
ED RING
540 ? :? :? :FOR W=1 TO 100:NEXT W
550 SHOTS=SHOTS-1:? "level=";LEVEL;" sco
re=";SCORE
560 ? "shots=";SHOTS;" total=";TOTAL *
570 ? " "
580 IF SHOTS<1 THEN GOTO 1050:REM END OF
 THE PROGRAM
590 POKE 705,0:GOTO 320
600 REM SOUND FOR HITS
610 FOR S=120 TO 1 STEP -2:SOUND 0,S,10,
10:NEXT S:SOUND 0,0,0,0
620 FOR S=1 TO 5:SOUND 0,Z,10,10:FOR W=1
 TO 50:NEXT W:SOUND 0,0,0,0:NEXT S:RETUR
N
630 REM DRAW BOARD
640 POKE 87,5
650 POKE 708,164:COLOR 1:PLOT 5,5:DRAWTO
 5,23
660 POKE 709,52:COLOR 2:PLOT 5,8:DRAWTO
5,20
670 PLOT 6,14
680 COLOR 1:PLOT 5,11:DRAWTO 5,17
690 POKE 710,8:COLOR 3:PLOT 3,2:DRAWTO 3
,26
700 PLOT 4,4:DRAWTO 4,24
710 PLOT 0,26:DRAWTO 3,26:DRAWTO 7,30
720 COLOR 1:PLOT 0,30:DRAWTO 8,30:DRAWTO
 8,34:DRAWTO 79,34
730 RETURN
740 REM SCORES
750 REM OFF TARGET
760 ? #6;"mIsSeD tHe TaRgEt"
770 FOR S=1 TO 120:SOUND 0,S,10,10:NEXT
S:SOUND 0,0,0,0
780 SCORE=0
790 FOR WALK=195 TO 58 STEP -1:POKE PLX,
WALK:NEXT WALK
800 FOR W=1 TO 50:NEXT W
810 FOR WALK=59 TO 195:POKE PLX,WALK:POK
E PLX+1,WALK:NEXT WALK
820 GOTO 540
830 REM OUTER RING
840 ? #6;"OUTER RING HIT    "
850 Z=60:GOSUB 600
860 SCORE=200:TOTAL=TOTAL+SCORE
870 GOTO 540
880 REM BULLS EYE
890 ? #6;"bulls eye hit     "
900 FOR S=120 TO 1 STEP -2:SOUND 0,S,10,
10:NEXT S:SOUND 0,0,0,0
```

COMMENTS ON LISTING

The following statements to be typed in inverse

```
Line 140    'SELECT LEVEL'
     290    '=' (both)
     300    'SHOTS=' & 'TOTAL='
     560    'SHOTS=' & 'TOTAL='
     1070   'HIGH ' & 'YOU '
All statements following REM's
```

```
910 FOR S=1 TO 120 STEP 2:SOUND 0,S,10,1
0:NEXT S:SOUND 0,0,0,0
920 FOR S=120 TO 1 STEP -2:SOUND 0,S,10,
10:NEXT S:SOUND 0,0,0,0
930 SCORE=500:TOTAL=TOTAL+SCORE
940 GOTO 540
950 REM RED RING
960 ? #6;"red ring hit      "
970 Z=10:GOSUB 600
980 SCORE=300:TOTAL=TOTAL+SCORE
990 GOTO 540
1000 REM GREEN MIDDLE
1010 ? #6;"GREEN RING HIT   "
1020 Z=40:GOSUB 600
1030 SCORE=100:TOTAL=TOTAL+SCORE
1040 GOTO 540
1050 FOR W=1 TO 250:NEXT W
1060 IF TOTAL>HIGH THEN HIGH=TOTAL
1070 POKE 87,1:POSITION 2,1:? #6;"high "
;HIGH;" you ";TOTAL
1080 FOR W=1 TO 500:NEXT W
1090 POSITION 2,1:? #6;"
  "
1100 GOTO 120
1110 REM INITIALIZE VERTICAL BLANK
1120 FOR I=1536 TO 1706:READ A:POKE I,A:
NEXT I
1130 FOR I=1774 TO 1787:POKE I,0:NEXT I
1140 REM SET PMBASE AND DRAW PLAYERS
1150 PM=PEEK(106)-16:PMBASE=256*PM
1160 FOR I=PMBASE+1023 TO PMBASE+2047:PO
KE I,0:NEXT I
1170 FOR I=PMBASE+1025 TO PMBASE+1057:RE
AD A:POKE I,A:NEXT I
1180 FOR I=PMBASE+1291 TO PMBASE+1293:RE
AD A:POKE I,A:NEXT I
1190 PLX=53248:PLY=1780:PLH=1784
1200 POKE 559,62:POKE 623,1:POKE 1788,PM
+4:POKE 53277,3:POKE 54279,PM
1210 X=USR(1696)
1220 RETURN
1230 REM V/BLANK DATA
1240 DATA 162,3,189,244,6,240,89,56,221,
240,6,240,83,141,254,6,106,141,255,6,142
,253,6,24,169,0,109,253,6
1250 DATA 24,109,252,6,133,204,133,206,1
89,240,6,133,203,173,254,6,133,205,189,2
48,6,170,232,46,255,6,144
1260 DATA 16,168,177,203,145,205,169,0,1
45,203,136,202,208,244,76,87,6,160,0,177
,203,145,205,169,0,145,203
1270 DATA 200,202,208,244,174,253,6,173,
254,6,157,240,6,189,236,6,240,48,133,203
,24,138,141,253,6,109,235
1280 DATA 6,133,204,24,173,253,6,109,252
,6,133,206,189,240,6,133,205,189,248,6,1
70,160,0,177,203,145,205,200
1290 DATA 202,208,248,174,253,6,169,0,15
7,236,6,202,48,3,76,2,6,76,98,228,0,0,10
4,169,7,162,6,160,0,32,92
1300 DATA 228,96
1310 REM PLAYER DATA
1320 DATA 15,25,49,17,29,5,13,17,23,214,
127,95,15,15,15,15,15,15,15,15,15,15,15,
15,6,6,6,6,6,6,6,6,14,10
1330 DATA 3,254,3
```

GAME: BATTLE

AUTHOR: JONATHAN VILLAS

RUNS ON: A SPECTRUM IN 16K

```
  1 BORDER 7: PAPER 7: INK 0: C
LS : PRINT AT 0,0;"  STOP TAPE,A
ND PRESS ANY KEY.  ": PAUSE 0: C
LS
  5 GO SUB 1000
 20 BORDER 0: PAPER 0: INK 6: C
LS
 800 PRINT INK 7; PAPER 2; FLASH
 1;AT 1,8;"START THE TAPE."
 810 LOAD ""
1000 RESTORE 1000: FOR z=0 TO 7:
 READ a: POKE USR "a"+z,a: NEXT
z: DATA 16,56,124,254,16,16,16,0
1010 RESTORE 1010: FOR f=1 TO 6:
 FOR g=0 TO 7: READ a: POKE USR
CHR$ (144+f)+g,a: NEXT g: NEXT f
1015 DATA 0,51,51,63,22,22,30,31
,0,0,0,0,0,102,102,255,0,204,204
,252,104,104,120,248
1020 DATA 219,219,255,223,255,22
3,255,223,153,255,255,231,195,19
5,195,195
1021 DATA 219,219,255,251,255,25
1,255,251
1030 RESTORE 1035: FOR z=0 TO 7:
 READ a: POKE USR "h"+z,a: NEXT
z: FOR z=0 TO 7: READ a: POKE US
R "i"+z,a: NEXT z: FOR z=0 TO 7:
 READ a: POKE USR "j"+z,a: NEXT
z
1035 DATA 0,16,16,186,238,214,17
0,254,0,0,16,24,28,62,127,255,32
,16,24,153,219,126,60,60
1040 FOR z=0 TO 7: READ a: POKE
USR "k"+z,a: NEXT z: DATA 0,0,0,
112,248,248,248,112
1100 RETURN
```

```
  1 POKE 23609,30: RESTORE 1: F
OR z=0 TO 7: READ a: POKE USR "i
"+z,a: NEXT z: DATA 15,17,33,66,
100,248,192,0
  5 READ dag,dag1,inv,inv1: DAT
A 0,0,0,0
 10 INK 1: CLS
 15 BRIGHT 1: PRINT AT 5,19; IN
K 2;"O";AT 16,13; INK 7;"O"
 20 PRINT AT 17,0;"
                  ": FOR n=2 T
O 16: PRINT AT n,16;"  ": NEXT n:
 PRINT AT 2,14;"  ";AT 0,14;"  ";AT 1,14;"
  ";AT 0,14;"  ";AT 1,14;"
 22 BRIGHT 0: INK 6: PRINT AT 0
,15;"BCD";AT 1,15;"EFG"
 25 FOR n=1 TO 45: PRINT AT INT
(RND*16)+1,INT (RND*10)+1; INK
4;"A": NEXT n: FOR n=1 TO 45: PR
INT AT INT (RND*16)+1,INT (RND*1
0)+20; INK 4;"A": NEXT n
 30 PRINT AT 7,15; INK 2;"===";
AT 14,15;"==="
 35 GO SUB 800
 40 BRIGHT 0
 100 LET a=13: LET b=5: LET c=8:
 LET d=5: LET e=3: LET f=5: LET
a1=5: LET b1=25: LET c1=10: LET
d1=25: LET e1=15: LET f1=25
 105 LET p=1
 110 PRINT AT 7,15; INK 2;"===";
AT 14,15; INK 2;"==="
 111 INK 6: PRINT AT a,b;"H";AT
c,d;"I"
 112 IF inv=0 THEN PRINT AT e,f;
"J"
 114 IF inv=1 THEN PRINT AT e,f;
 BRIGHT 1; INK 0;"  "
 115 IF b=30 THEN PRINT AT 19,0;
"PLAYER 1 HAS WON THE CASTLE!!";:
 BEEP 1,30: GO SUB 2000: GO TO 3
000
 120 BRIGHT 1: INK 5: PRINT AT a
,b;"H";AT c1,d1;"I"
 124 IF inv1=0 THEN PRINT AT e1,
f1;"J"
 128 IF inv1=1 THEN PRINT AT e1,
f1; INK 0; BRIGHT 1;"  "
 129 IF b1=1 THEN PRINT AT 19,0;
"PLAYER 2 HAS WON THE CASTLE!!";
```

MOVEMENTS

	King	Jester	Wizard
North	Kn	jn	wn
South	Ks	js	ws
East	Ke	je	we
West	Kw	jw	ww

MAIN VARIABLES:

a, b: position of player 1's king
c, d: position of player 1's wizard
e, f: position of player 1's jester
a1, b1: position of player 2's king
c1, d1: position of player 2's wizard
e1, f1: position of player 2's jester

The loader program sets up user-defined graphics.

LOOPS:

130-198 — checks inputs
500-599 — spell-throwing
700-810 — redraws scenery
2000-3000 — castle won!

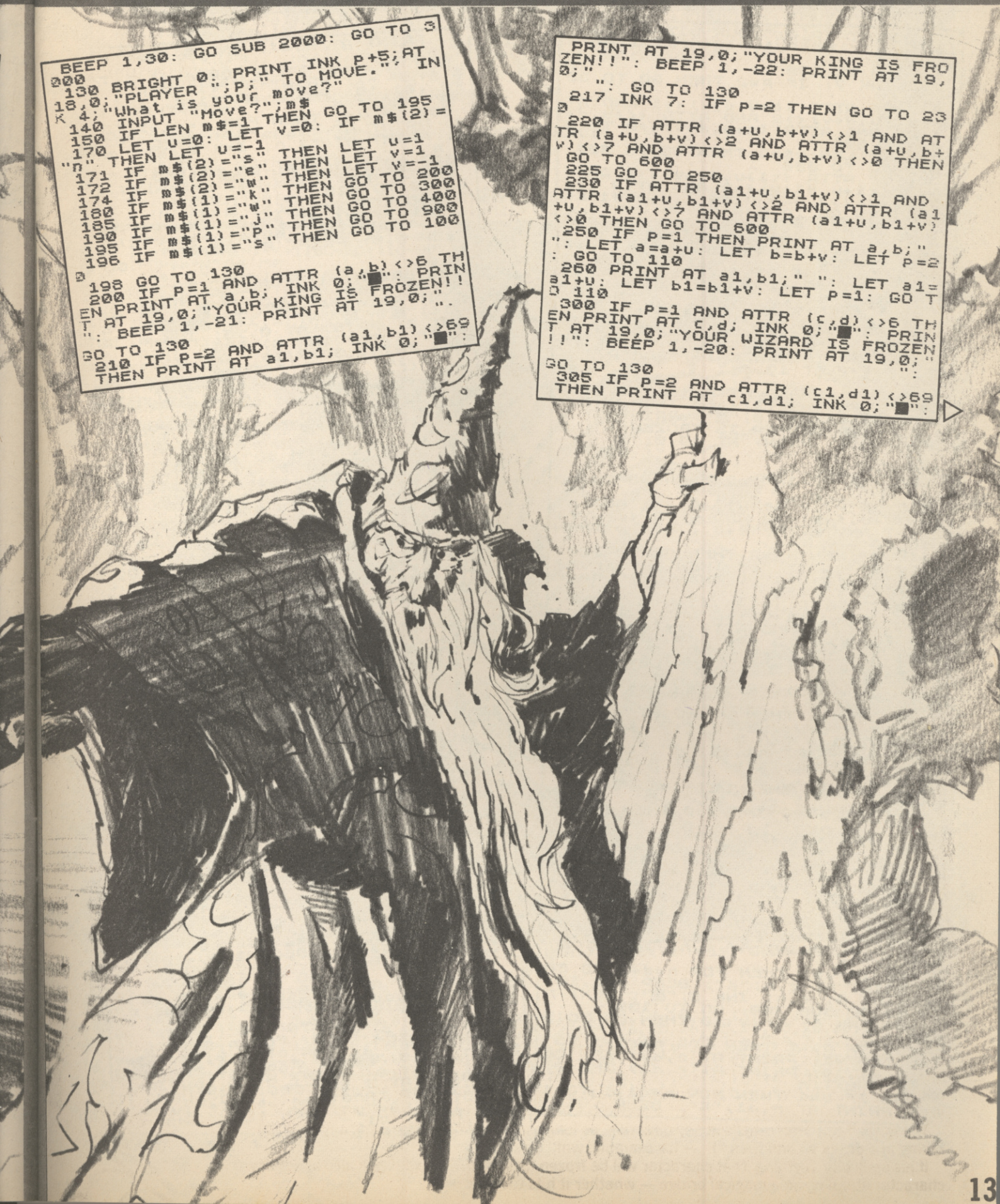
Venture into a world of wicked wizards, scheming kings and cunning jesters and win control of a castle!

This is a graphic strategy game for two players. The aim of the game is to gain control of your opponent's castle by moving your king to the opposite side of the screen and killing the enemy ruler. Your king has two helpers — his jester and a wizard.

The jester can kill a king with his dagger. He can pick up his dagger by standing next to it — on the right — and pressing the "p" key. He can then stab the king once he gets near enough and if you press the "s" key. He can also be made invisible by typing in "jni". To make him visible again, you must type in "o" after entering the jester's direction — for example "jno".

The wizard can throw spells in any direction, as long as he is not directly facing anything, by typing in a direction and then "f" — for example, wnf" etc.

If his spell hits anything, that character will be frozen for a turn. This spell will also affect any character standing on a magical bridge — whether it hits them or not.



```
 BEEP 1,30: GO SUB 2000: GO TO 3
000
 130 BRIGHT 0: PRINT INK p+5;AT
18,0;"PLAYER ";p;" TO MOVE.";" IN
K 4;"What is your move?"
 140 INPUT "Move?";m$
 150 IF LEN m$=1 THEN GO TO 195
 170 LET u=0: LET v=0: IF m$(2) =
"n" THEN LET u=-1
 171 IF m$(2) ="s" THEN LET u=1
 172 IF m$(2) ="e" THEN LET v=1
 174 IF m$(2) ="w" THEN LET v=-1
 180 IF m$(1) ="k" THEN GO TO 200
 185 IF m$(1) ="w" THEN GO TO 400
 190 IF m$(1) ="j" THEN GO TO 900
 195 IF m$(1) ="P" THEN GO TO 100
 196 IF m$(1) ="s"
0
 198 GO TO 130
 200 IF p=1 AND ATTR (a,b) <>6 TH
EN PRINT AT a,b; INK 0;"■": PRIN
T AT 19,0;"YOUR KING IS FROZEN!!
": BEEP 1,-21: PRINT AT 19,0;"..
GO TO 130
 210 IF p=2 AND ATTR (a1,b1) <>69
 THEN PRINT AT a1,b1; INK 0;"■":
```

```
 PRINT AT 19,0;"YOUR KING IS FRO
ZEN!!": BEEP 1,-22: PRINT AT 19,
0;"
   ": GO TO 130
 217 INK 7: IF p=2 THEN GO TO 23
0
 220 IF ATTR (a+u,b+v) <>1 AND AT
TR (a+u,b+v) <>2 AND ATTR (a+u,b+
v) <>7 AND ATTR (a+u,b+v) <>0 THEN
 GO TO 600
 225 GO TO 250
 230 IF ATTR (a1+u,b1+v) <>1 AND
ATTR (a1+u,b1+v) <>2 AND ATTR (a1
+u,b1+v) <>7 AND ATTR (a1+u,b1+v)
<>0 THEN GO TO 600
 250 IF p=1 THEN PRINT AT a,b;"
": LET a=a+u: LET b=b+v: LET p=2
: GO TO 110
 260 PRINT AT a1,b1;" ": LET a1=
a1+u: LET b1=b1+v: LET p=1: GO T
O 110
 300 IF p=1 AND ATTR (c,d) <>6 TH
EN PRINT AT c,d; INK 0;"■": PRIN
T AT 19,0;"YOUR WIZARD IS FROZEN
!!": BEEP 1,-20: PRINT AT 19,0;"
                              ":
GO TO 130
 305 IF p=2 AND ATTR (c1,d1) <>69
 THEN PRINT AT c1,d1; INK 0;"■":
```

CONTINUED

```
 PRINT AT 19,0;"YOUR WIZARD IS F
ROZEN!!": BEEP 1,-10: PRINT AT 1
9,0;"
                ": GO TO 130
 308 INK 7: IF p=2 THEN GO TO 33
0
 310 IF ATTR (c+u,d+v)<>1 AND AT
TR (c+u,d+v)<>2 AND ATTR (c+u,d+
v)<>7 AND ATTR (c+u,d+v)<>0 THEN
 GO TO 600
 320 IF LEN m$=3 THEN GO TO 500
 325 GO TO 350
 330 IF ATTR (c1+u,d1+v)<>1 AND
ATTR (c1+u,d1+v)<>2 AND ATTR (c1
+u,d1+v)<>7 AND ATTR (c1+u,d1+v)
<>0 THEN GO TO 600
 340 IF LEN m$=3 THEN GO TO 500
 350 IF p=1 THEN PRINT AT c,d;"
": LET c=c+u: LET d=d+v: LET p=2
: GO TO 110
 360 PRINT AT c1,d1;" ": LET c1=
c1+u: LET d1=d1+v: IF LEN m$=2 T
HEN LET p=1: GO TO 110
 370 IF LEN m$=3 THEN GO TO 500
 400 IF p=1 AND ATTR (e,f)<>6 AN
D ATTR (e,f)<>64 THEN PRINT AT e
,f; INK 0;"■": PRINT AT 19,0;"YO
UR JESTER IS FROZEN!!": BEEP 1,-
12: PRINT AT 19,0;"
                ": GO TO 130
 405 IF p=2 AND ATTR (e1,f1)<>69
 AND ATTR (e1,f1)<>64 THEN PRINT
 AT e1,f1; INK 0;"■": PRINT AT 1
9,0;"YOUR JESTER IS FROZEN!!": B
EEP 1,-14: PRINT AT 19,0;"
                ": GO TO
130
 408 INK 7: IF p=2 THEN GO TO 43
0
 410 IF ATTR (e+u,f+v)<>1 AND AT
TR (e+u,f+v)<>2 AND ATTR (e+u,f+
v)<>7 AND ATTR (e+u,f+v)<>0 THEN
 GO TO 600
 415 IF LEN m$=2 THEN GO TO 450
 420 IF m$(3)="i" THEN LET inv=1
 425 IF m$(3)="o" THEN LET inv=0
 426 GO TO 450
 430 IF ATTR (e1+u,f1+v)<>1 AND
ATTR (e1+u,f1+v)<>2 AND ATTR (e1
+u,f1+v)<>7 AND ATTR (e1+u,f1+v)
<>0 THEN GO TO 600
 440 IF LEN m$=2 THEN GO TO 450
 445 IF m$(3)="i" THEN LET inv1=
1
 448 IF m$(3)="o" THEN LET inv1=
0
 450 IF p=1 THEN PRINT AT e,f;"
": LET e=e+u: LET f=f+v: LET p=2
: GO TO 110
 460 PRINT AT e1,f1;" ": LET e1=
e1+u: LET f1=f1+v: LET p=1: GO T
O 110
 500 IF p=2 THEN LET p=1: GO TO
550
 510 LET p=2: IF v<>0 THEN GO TO
 530
 515 IF u=-1 THEN FOR n=c-1 TO 0
 STEP -1: PRINT AT n,d;"K": BEEP
 .01,10: PRINT AT n,d; INK 0;"■"
: NEXT n
 520 IF u=1 THEN FOR n=c+1 TO 16
: PRINT AT n,d;"K": BEEP .01,10:
 PRINT AT n,d; INK 0;"■": NEXT n
 530 IF v=-1 THEN FOR n=d-1 TO 0
 STEP -1: PRINT AT c,n;"K": BEEP
 .01,10: PRINT AT c,n; INK 0;"■"
: NEXT n
 540 IF v=1 THEN FOR n=d+1 TO 30
: PRINT AT c,n;"K": BEEP .01,10:
 PRINT AT c,n; INK 0;"■": NEXT n
 545 GO SUB 700: GO TO 130
 550 INK 6: IF v<>0 THEN GO TO 5
80
 555 IF u=-1 THEN FOR n=c1-1 TO
 0 STEP -1: PRINT AT n,d1;"K": BE
EP .01,10: PRINT AT n,d1; INK 0;
"■": NEXT n
 560 IF u=1 THEN FOR n=c1+1 TO 1
6: PRINT AT n,d1;"K": BEEP .01,1
```

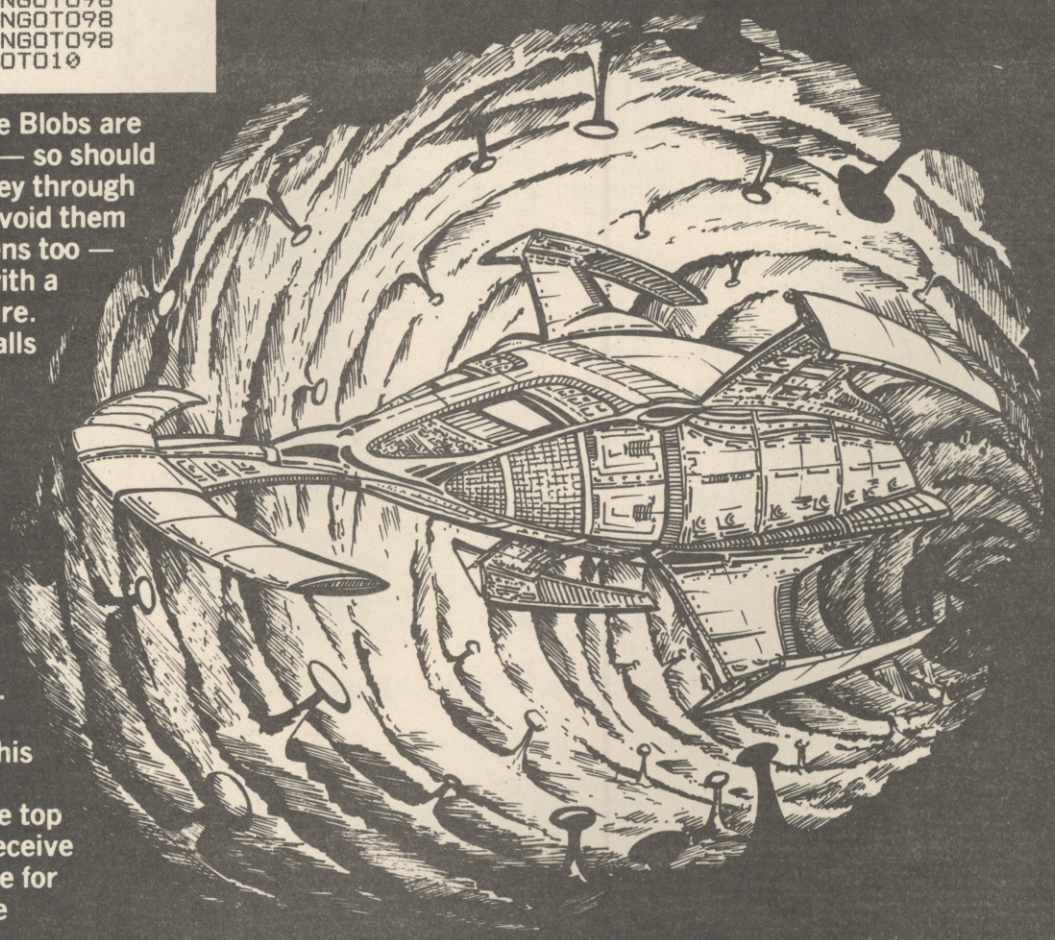
```
0: PRINT AT n,d1; INK 0;"■": NEX
T n
 580 IF v=-1 THEN FOR n=d1-1 TO
0 STEP -1: PRINT AT c1,n;"K": BE
EP .01,10: PRINT AT c1,n; INK 0;
"■": NEXT n
 585 IF v=1 THEN FOR n=d1+1 TO 3
0: PRINT AT c1,n;"K": BEEP .01,1
0: PRINT AT c1,n; INK 0;"■": NEX
T n
 599 GO SUB 700: GO TO 130
 600 IF p=1 THEN LET y=7: LET z=
2: GO TO 610
 605 LET y=2: LET z=7
 610 PRINT AT 20,0; INK y; PAPER
 z;"You can't move that way!": B
EEP 1,0: PRINT AT 20,0;"
                ": GO TO
140
 700 BRIGHT 1: FOR n=3 TO 16: PR
INT AT n,16; INK 1;"■": NEXT n:
PRINT AT 0,14; INK 1;"■■■";AT
1,14;"■ ■";AT 2,14;"■■■■": BR
IGHT 0: PRINT AT 0,15; INK 6;"BC
D";AT 1,15; INK 6;"EFG"
 705 PRINT AT 7,15; INK 2;"===";
AT 14,15;"===": RETURN
 800 INK 0: BRIGHT 1: PRINT AT 0
,0;"■■■■■■■■■■■■■■■■■■■■■■■■■■■■
■■■■
```

GAME: CANYON RAIDER

AUTHOR: STOATSOFT

RUNS ON: A SHARP MZ80K

```
1 DIMHS(20),HS$(20):GOSUB799:PRINT"■■■■■■■Canyon Raider":GOSUB1100:GOSUB2000
2 HS(1)=4000:HS$(1)="THE BEST":PRINT:PRINT"Keys=A-LEFT:D-RIGHT:space-FIRE"
3 INPUT"ENTER SKILL LEVEL(1-HARDEST/9-EASIEST)?";QB:INPUT"FIRING?";OP$
4 OP$=LEFT$(OP$,1):HS$(2)="CHAMPION":HS$(3)="  HERO":GOSUB200
5 PRINT"DON'T HIT THE WALLS!++ANY KEY TO START!"
6 GETA$:IFA$=""THEN6
7 PRINT"■  ++Canyon Raider++":X=53250
8 POKE10407,0
9 SC=0
10 READA:IFA=-1THENRESTORE:QB=QB-1:GOSUB200:GOTO10
15 POKEX,U
19 MZ=PEEK(X+39):RZ=PEEK(X+40)
20 GETA$:IFA$=""THENU=201:GOTO50
21 IFOP$="N"THEN30
22 C=INT(RND(1)*519)+53728:IF(PEEK(C)=MZ)+(PEEK(C)=RZ)THENPOKEC,199
23 D=INT(RND(1)*519)+53728:IF(PEEK(D)=MZ)+(PEEK(D)=RZ)THENPOKED,67
30 IFA$="A"THENX=X-1:SC=SC+(10-QB)
40 IFA$="D"THENX=X+1:SC=SC+(10-QB)
41 IFOP$="N"THEN50
45 IFA$=" "THENKIL=40:GOSUB1050
50 IFPEEK(X+1)=67THENGOTO98
55 IFPEEK(X-1)=67THENGOTO98
56 IFPEEK(X+40)=67THENGOTO98
57 IFPEEK(X+41)=67THENGOTO98
58 IFPEEK(X+39)=67THENGOTO98
90 PRINT  TAB(A);K$:GOTO10
98 REM*AAARRGGHH!
```



The Blobs are coming! The Blobs are coming! Blobs are deadly — so should you see one on your journey through the sharp space cavern, avoid them at all costs! There are aliens too — but these you can shoot with a well aimed blast of laser fire.

Beware of the cavern walls — these are constructed of baby blobules which are equally as lethal as the grown up wandering blobs!

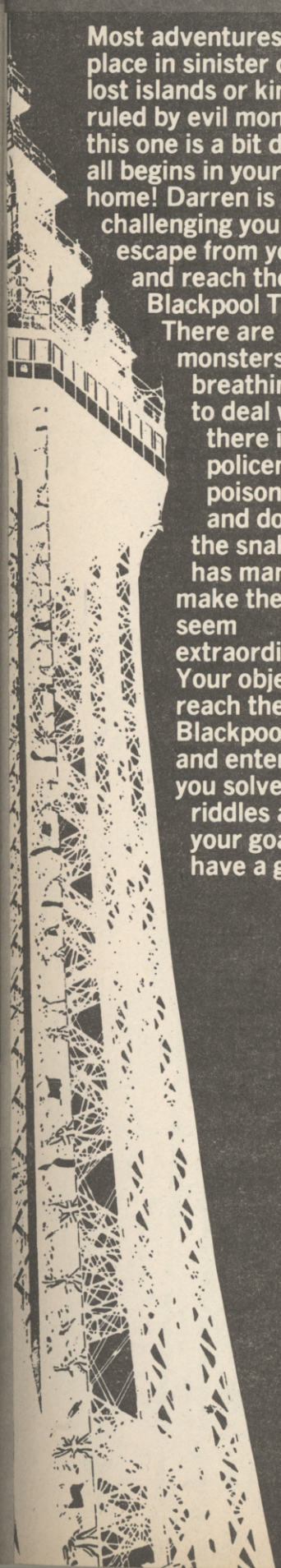
Full instructions are included in the program — but remember, beware of these Blobs!

Control keys are: A=left, D=right, Space Bar=fire. There are nine skill levels to deal with. Remember this is a Book of Games competition listing and the top five Sharp-shooters will receive specially selected software for their machine. Look at the contents page for details.

```
99 POKEX,107:FORS=1TO40:USR(68):POKE4514,S:USR(71):NEXTS:PRINT"■■■■SCORE=";SC
100 FORTU=1TO200:NEXT
101 GOSUB300
102 GETA$:IFA$=""THEN102
103 PRINT"■": RESTORE:  GOTO3
105 DATA0,1,2,3,4,5,6,7,6,5,4,5,6,7,8,9,10,11,11,12,12,13,14,13,14,13,14,15
106 DATA16,17,18,19,18,19,19,20,20,21,22,21,23,24,26,25,26,25,24,23,22,21,21
107 DATA20,19,19,18,19,18,17,16,15,14,13,12,11,10,9,8,9,9,8,7,6,5,4,3,2,1,0,0
108 DATA1,2,1,2,3,4,5,6,5,4,2,4,5,6,7,8,9,10,11,12,11,13,14,15,16,17,16,15,14
109 DATA13,11,10,9,8,7,6,5,6,7,6,5,4,3,4,3,2,1,2,3,4,3,2,1,0,1,2,3,4,5,5,5,4
110 DATA4,6,8,6,7,8,9,10,11,12,13,12,11,12,13,14,15,17,15,16,15,14,13,14,13
111 DATA13,12,11,11,12,11,10,9,8,7,8,9,8,7,6,5,4,3,4,5,6,7,6,5,4,3,2,1
112 DATA2,3,5,6,5,4,3,2,1,2,3,4,5,6,7,6,5,4,3,2,1,0,-1
200 IFQB<1THENQB=1
```

CONTINUED

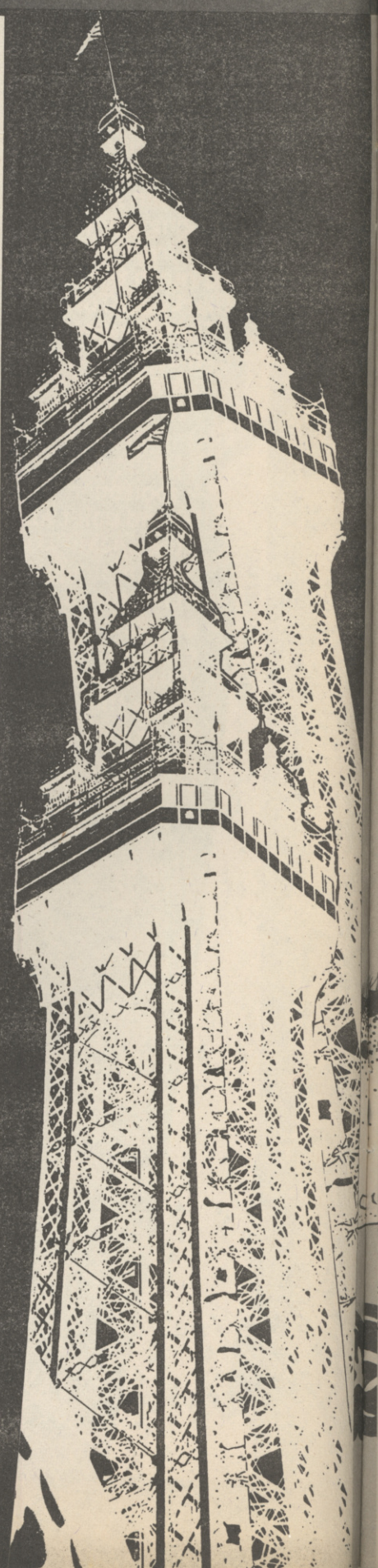
```
201 IFQB=1THENK$="■■■
```

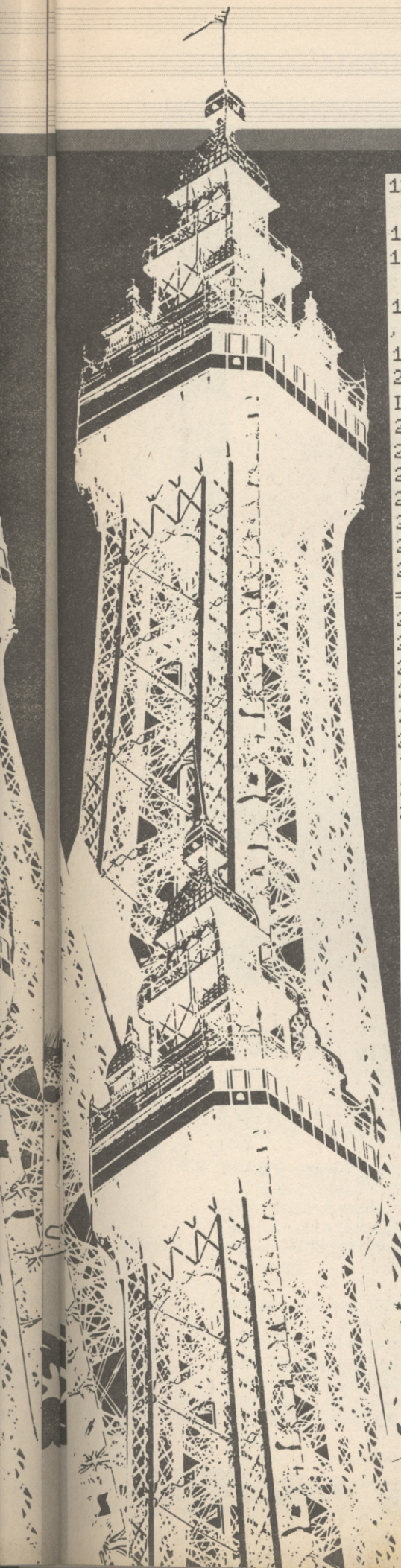


Most adventures take place in sinister castles, lost islands or kingdoms ruled by evil monarchs. But this one is a bit different. It all begins in your own home! Darren is challenging you to escape from your house and reach the Blackpool Tower. There are no evil monsters or fire-breathing dragons to deal with — but there is the odd policeman, poisoned fruit and don't forget the snake! Darren has managed to make the ordinary seem extraordinary! Your objective is to reach the Blackpool Tower and enter it — can you solve all the riddles and reach your goal? Go on, have a go!

```
45 IFPEEK(#20C)>128THENPOKE#20C,PEEK(#20C)-128
50 RM=1:NL=19:NV=22:NI=12:LK%=1:LL%=1:LB%=1
60 GOSUB 1000
65 PAPER2:INK0
70 CLS:PRINT:PRINTL$(RM)
80 GOTO2600
90 INPUT"WHAT SHALL I DO";I$:IFI$="POUR WATER"THEN100
91 IFRND(1)<.7ANDRM=4THENPRINT"THE SNAKE BIT YOU.":GOTO9000
92 IFRM=15THEN9000
93 IFRM=6ANDFO=0THENPRINT"THE FIRE HAS SPREAD. YOU ARE DEAD.":GOTO9
000
94 IFRM=8THENL%(1)=-1:I=I-1
100 GOSUB200:GOSUB300
10.5 PRINT" "CHR$(27)"G"CHR$(27)"Q"I$" "CHR$(27)"R"
110 FORN=1TONV:IFV$=V$(N)THENGOTOG%(N)
120 NEXT
130 PRINT"I DO NOT UNDERSTAND":PRINTCHR$(34)I$CHR$(34):GOTO90
140 PRINT"I CAN'T GO ";I$:GOTO90
150 PRINT"I CAN'T ";I$:GOTO90
200 FORN=1TOLEN(I$):SG$=MID$(I$,N,1)
210 IFSG$>="A"ANDSG$<="Z"THENI$=LEFT$(I$,N-1)+CHR$(ASC(SG$)+32)+MID
$(I$,N+1)
220 NEXT:RETURN
300 B$="":V$="":SP=0:FORN=1TOLEN(I$)
310 IFMID$(I$,N,1)=" "ANDSP=0THENSP=1:GOTO330
320 IFSP=0THENV$=V$+MID$(I$,N,1)ELSEB$=B$+MID$(I$,N,1)
330 NEXT
340 RETURN
500 IFNO%(RM)THENRM=NO%(RM):GOTO70
502 GOTO 140
505 IFEA%(RM)THENRM=EA%(RM):GOTO70
507 GOTO 140
510 IFSO%(RM)THENRM=SO%(RM):GOTO70
512 GOTO 140
515 IFWE%(RM)THENRM=WE%(RM):GOTO70
517 GOTO 140
1000 DIMV$(NV),G%(NV),L$(NL),O$(NI),L%(NI),NO%(NL),WE%(NL),SO%(NL),
EA%(NL)
1010 READD$:IFD$<>"START"THEN9999
1020 FORN=1TONV:READV$(N),G%(N):NEXT
1030 READD$:IFD$<>"OBJECTS"THEN9999
1040 FORN=1TONI:READO$(N),L%(N):NEXT
1041 DATA START,N,500,E,505,S,510,W,515,PUT,2000,GET,2200,EAT,2400,
LOOK,2600
1042 DATA OPEN,2800,PICK,3000,U,3200,D,3400,POUR,3600,I,3800,R,70,U
NLOCK,4000
1043 DATA READ,4200,QUIT,9000,PLACE,4600,STOP,9000,GIVE,4800,ENTER
1044 DATA 5000
1050 DATA OBJECTS
1060 DATA KEY,-1,SAW,4,PANS Y,4,KNIFE,3,FORK,-1,FRUIT,2,10P,-1,CUP,-
1,WATER,3
1061 DATA PAPER,-1,LITTER,18,50P,-1
1064 READD$:IFD$<>"LOCATIONS"THEN9999
```

```
1065 FORN=1TONL
1070 REPEAT:READP$:IFP$<>"*"THENL$(N)=L$(N)+P$
1080 UNTILP$="*"
1090 READNO%(N),EA%(N),SO%(N),WE%(N)
1095 NEXT
1096 READD$:IFD$<>"END"THEN9999
1097 RETURN
1098 DATA LOCATIONS
1100 DATA"YOU ARE AT THE ENTRANCE TO YOUR HOUSE. THE DOOR IS LOCKED
SO THAT I
1105 DATA"T WILL NOTOPEN.  EXITS NORTH AND EAST. ",*,2,3,0,0
1110 DATA"YOU ARE IN THE LOUNGE.  THERE ARE SOME DRAWERS BY THE WALL
.  ALSO,  A
1115 DATA" LIGHT TO THE NORTH IS VISIBLE, NEXT TO A SETTEE. ",*,6,0,1
,0
1120 DATA"YOU ARE IN THE KITCHEN.  THERE IS A    LOCKED DOOR TO THE
EAST.  THERE
1125 DATA" ARE SEVERAL CUPBOARDS ON THE WALL. ",*,0,0,0,1
1130 DATA"YOU ARE IN THE BACKYARD.  THERE IS A   SNAKE LYING ON THE
GROUND BY
1135 DATA" YOUR FEET",*,0,0,0,3
1140 DATA"YOU ARE AT THE BOTTOM OF SOME STAIRS.  THERE IS A CUPBOARD
 AT THE B
1145 DATA"OTTOM      BESIDE YOU. ",*,0,6,9,0
1150 DATA"YOU ARE IN THE FRONT ROOM.  THERE IS A SETTEE IN IT.  THERE
 IS ALSO
1155 DATA"A COAL     FIRE LIT.  IT LOOKS DANGEROUS.  YOU CAN SEE THE G
ARDEN THR
1160 DATA"OUGH THE WINDOW TO   THE NORTH.  SOUTH IS THE LOUNGE,  EAST
 THE HALL.
1165 DATA"THERE ARE SOME STEPS TO THE  WEST. ",*,0,7,2,5
1170 DATA"YOU ARE IN THE HALL.  A LOCKED DOOR IS ON THE NORTH WALL.
EXIT WEST.
1175 DATA *,0,0,0,6
1180 DATA"YOU ARE IN THE GARDEN.  THERE IS A ROADTO THE NORTH.  THE D
OOR SLAMS
1185 DATA" SHUT, WITHTHE KEY IN THE LOCK. ",*,14,0,0,0
1190 DATA"YOU ARE AT THE TOP OF THE STAIRS. THEREIS A ROOM TO THE SO
UTH. ",*,5
1195 DATA 0,10,0,"YOU ARE ON THE LANDING.  THERE IS A    ROOM TO THE
 SOUTH,  A
1200 DATA"ND ONE TO THE EAST",*,9,11,12,0
1205 DATA"YOU ARE BY A BED.  EXIT WEST. ",*,0,0,0,10
1210 DATA"YOU ARE IN A BEDROOM WITH A BED TO THESOUTH.  THERE IS A C
UPBOARD T
1215 DATA"O THE LEFTOF YOU. ",*,10,0,13,0
1220 DATA"YOU ARE BY A BED.  EXIT NORTH. ",*,12,0,0,0
1225 DATA"YOU ARE BY THE ROAD,  WICH RUNS EAST-  WEST.  THERE IS A HO
USE TO TH
1230 DATA"E NORTH,   ACROSS THE ROAD. ",*,15,16,0,17
1235 DATA"YOU HAVE JUST BEEN RUN OVER BY A CAR. ",*,0,0,0,0
1240 DATA"THE ROAD COMES TO A DEAD END AT THE    EAST.  THERE IS A CA
R PARK TO
1245 DATA" THE EAST AND A PATH WEST. ",*,15,18,0,14
1250 DATA"THE ROAD RUNS EAST-WEST.  THERE IS A   TOWER TO THE EAST. "
,*,15,14
```





```
1255 DATA 0,19,"YOU ARE IN THE CAR PARK.  THERE IS A   LITTER BIN BY
 YOUR SID
1260 DATA"E.  EXIT WEST",*,0,0,0,16
1265 DATA"YOU ARE BY BLACKPOOL TOWER.  YOU CAN   HEAR THE SEA IN THE
 DISTANCE
1270 DATA".  THERE ISA MAN AT THE DOOR WHO WOULD LIKE 50P.",*,0,17,0
,0
1999 DATA END
2000 FD=0:FORN=1TONI:IFO$(N)=B$ANDL%(N)=0THENPRINT"OKAY...":FD=1:I=
I-1:L%(N)=RM
2002 IFB$=""THENPRINT"GET WHAT ?":GOTO90
2010 NEXT
2020 IFFD=0THENPRINT"I DON'T HAVE A ";B$;" !"
2030 GOTO 90
2200 IFI>=5THENPRINT"I CAN'T CARRY ANY MORE.":GOTO90
2202 IFB$=""THENPRINT"GET WHAT?":GOTO90
2205 FD=0:FORN=1TONI:IFO$(N)=B$ANDL%(N)=RMTHENPRINT"OKAY.":I=I+1:FD
=1:L%(N)=0
2210 NEXT
2220 IFFD=0THEN150
2230 GOTO 90
2400 IFB$=""THENINPUT"EAT WHAT";B$:GOTO2400
2410 IFB$="FRUIT"ANDL%(6)=0THENPRINT"IT WAS  POISONED.":GOTO9000
2499 PRINT"I MUST HAVE THE ";B$;" TO":PRINT"BE ABLE TO  EAT IT.":GO
TO90
2600 FD=0:FORN=1TONI:IFL%(N)<>RMTHENNEXT:GOTO2630
2610 IFFD=0THENPRINT:PRINT"I CAN SEE...":FD=1
2620 PRINT"A ";O$(N):NEXT:GOTO90
2630 IFFD=0ANDV$="LOOK"THENPRINT"I CAN'T SEE ANYTHING SPECIAL."
2640 GOTO 90
2800 IFB$=""THENINPUT"OPEN WHAT";B$
2805 IFB$="CUPBOARD"THEN2850
2810 IFB$="DOOR"THEN2900
2815 IFB$="DRAWER"THENPRINT"THERE ARE SOME PAPERS AND A FORK.":L%(1
0)=2
2816 IFB$="DRAWER"THENL%(5)=2:GOTO90
2849 GOTO 150
2850 IFRM=5THENPRINT"THERE IS AN ELECTRIC MTER WITH .10P ON IT.":L%(
7)=5:GOTO90
2860 IFRM=3THENPRINT"IT'S FULL OF CUPS.":L%(8)=3:GOTO90
2865 IFRM=12ANDLK%=1THENPRINT"IT'S LOCKED.":GOTO90
2870 IFRM=12THENPRINT"THERE IS A KEY INSIDE.":L%(1)=12:GOTO90
2899 GOTO 150
2900 IFRM=7ANDLL%=1THENPRINT"IT'S LOCKED.":GOTO90
2901 IFRM=3ANDLB%=0THENSO%(3)=4:GOTO90
2905 IFRM=7ANDLL%=0THENPRINT"YOU CAN SEE THROUGH TO THE GARDEN.":NO
%(7)=8:GOTO90
2910 IFRM=3ANDLB%=0THENPRINT"YOU CAN WALK IN.  TO THE BACKYARD TO THE
SOUTH."
2999 GOTO150
3000 IFB$=""THENINPUT"PICK WHAT";B$
3005 IFB$="LOCK"THEN3020
3019 GOTO 150
3020 IFRM=7THENPRINT"I CAN'T PICK THIS LOCK.":GOTO90
3030 IFL%(5)<>0THENPRINT"I NEED SOMETHING WITH SPIKES ON IT.":GOTO9
0
```

GAME: BLACKPOOL TOWER

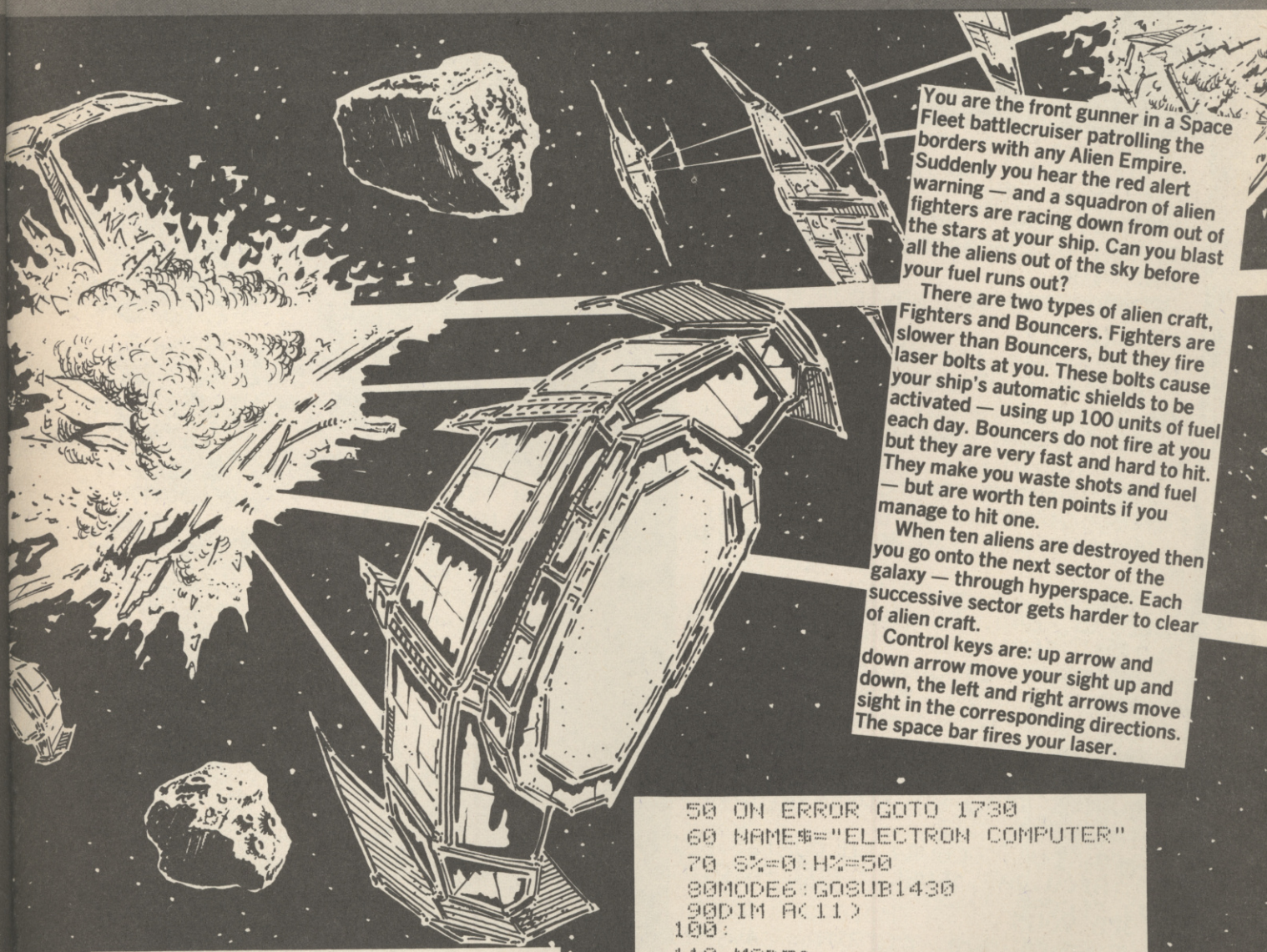
CONTINUED

```
3040 IFRM=12THENLK%=0:PRINT"OKAY...":GOTO90
3099 GOTO 150
3200 IFRM=5THENRM=9:GOTO70ELSE140
3400 IFRM=9THENRM=5:GOTO70ELSE140
3600 IFB$=""THENINPUT"POUR WHAT";B$
3605 IFB$="WATER"THEN3650
3649 GOTO 150
3650 IFL%(9)<>0THEN150
3660 PRINT"THE FIRE HAS BEEN PUT OUT BY THE WATER":FO=1
3665 L%(9)=.3:I=I-1
3670 GOTO 90
3800 FD=0:FORN=1TONI:IFL%(N)<>0THENNEXT:GOTO3840
3810 IFFD=0THENPRINT"I HAVE THE FOLLOWING...":FD=1
3820 PRINT"A ";O$(N):NEXT
3840 IFFD=0THENPRINT"I DON'T HAVE ANYTHING."
3850 GOTO 90
4000 IFB$=""THENINPUT"UNLOCK WHAT";B$
4005 IFL%(1)<>0THENPRINT"BUT I HAVE NO KEY.":GOTO90
4010 IFRM=7THENLL%=0:PRINT"OKAY.":GOTO90
4015 IFRM=3THENLB%=0:PRINT"OKAY.":GOTO90
4200 IFB$=""THENINPUT"READ WHAT";B$
4205 IFB$="PAPER"ANDL%(10)=0THENPRINT"IT'S BLANK.":GOTO90
4249 GOTO 150
4600 IFB$=""THENINPUT"PLACE WHAT WHERE";B$
4610 IFLEFT$(B$,6)="LITTER"THEN4650
4649 GOTO 150
4650 IF(MID$(B$,8)="IN BIN"ORMID$(B$,8)="IN LITTER BIN")ANDRM=18THE
N4660
4655 PRINT"I CAN'T PUT IT THERE.":GOTO90
4660 PRINT"THE POLICEMAN WATCHING YOU WAS          DELIGHTED. HE HAS
GIVEN YOU 50P
4665 L%(12)=0:L%(11)=-1:GOTO90
4800 IFB$=""THENINPUT"GIVE WHAT TO WHAT";B$
4801 IFRM<>19THENPRINT"I CAN'T DO THAT YET.":GOTO90
4805 IFLEFT$(B$,3)="MAN"THEN4850
4849 GOTO 150
4850 IFL%(12)<>0THENPRINT"BUT I DON'T HAVE 50P TO GIVE.":GOTO90
4855 PRINT"HE WILL NOW LET YOU IN.":E%=1:GOTO90
5000 IFB$=""THENINPUT"ENTER WHAT";B$
5005 IFB$="TOWER"ANDE%=1THENPRINT"YOU HAVE SUCCESSFULLY COMPLETED T
HIS  GAME.":END
5010 IFB$="TOWER"ANDE%=0THENPRINT"THE DOORKEEPER STOPS YOU. HE WANT
S 50P":GOTO90
5049 GOTO 150
9000 INPUT"DO YOU WANT TO TRY AGAIN";Y$:IFY$="Y"THENRUN
9001 END
9999 PRINT:PRINT"?MESSY DATA ERROR";:END
60000 INPUT"HOW MANY TIMES SHOULD I SAVE";H
60001 FORA=1TOH
60002 PRINT"SAVING IT IN FAST...":CSAVE"BLACKPOOL TOWER",AUTO
60003 WAIT100
60004 PRINT"SAVING IT.  IN SLOW...":CSAVE"BLACKPOOL TOWER",S,AUTO
60005 WAIT500:PRINT:PRINT
60006 NEXTA
```

GAME: FRONT GUNNER

AUTHOR: SEAN AKERS

RUNS ON: A BBC B in 32k



You are the front gunner in a Space Fleet battlecruiser patrolling the borders with any Alien Empire. Suddenly you hear the red alert warning — and a squadron of alien fighters are racing down from out of the stars at your ship. Can you blast all the aliens out of the sky before your fuel runs out?

There are two types of alien craft, Fighters and Bouncers. Fighters are slower than Bouncers, but they fire laser bolts at you. These bolts cause your ship's automatic shields to be activated — using up 100 units of fuel each day. Bouncers do not fire at you but they are very fast and hard to hit. They make you waste shots and fuel — but are worth ten points if you manage to hit one.

When ten aliens are destroyed then you go onto the next sector of the galaxy — through hyperspace. Each successive sector gets harder to clear of alien craft.

Control keys are: up arrow and down arrow move your sight up and down, the left and right arrows move sight in the corresponding directions. The space bar fires your laser.

VARIABLES

NAME:	Holds the name of the high score holder.
S%:	Holds the value of the players score.
H%:	Holds the value of the current high score.
SHEET:	Holds the sector number. It is used to control the difficulty of the game.
FU%:	Holds the amount of fuel left.
ARRAY A(x):	Holds the type of alien to appear. If A(x) = 1 then a fighter will appear, if a 2 then a bouncer will appear and if it equals 0 then the alien is destroyed.
MAX%:	Holds the number of times the alien can fire at you.
DV% & DH%:	Random numbers used to say whether the alien moves up, down, left or right.
XI%:	Holds the old X co-ordinate of the alien.
YI%:	Holds the old Y co-ordinate of the alien.
X%:	Holds the current Y co-ord of the alien.
Y%:	Holds the current Y co-ord of the alien.
EXI%:	X co-ord of where first alien laser bolt strikes.
EYI%:	X co-ord of where first alien laser bolt strikes.
EX2%:	X co-ord of where second alien laser bolt strikes.
EY2%:	Y co-ord of where second alien laser bolt strikes.

```
   50 ON ERROR GOTO 1730
   60 NAME$="ELECTRON COMPUTER"
   70 S%=0:H%=50
   80MODE6:GOSUB1430
   90DIM A(11)
  100:
  110 MODE2
  120 SHEET=0
  130 VDU22,2
  140 SHEET=SHEET+1
  150 VDU23;8202;0;0;0;
  160 VDU23,255,255,255,255,255,
255,255,255,255
  170 W$=CHR$255+CHR$255+CHR$255
+CHR$10+CHR$8+CHR$8+CHR$8+CHR$25
5+CHR$255+CHR$255+CHR$10+CHR$8+C
HR$8+CHR$8+CHR$255+CHR$255+CHR$2
55
  180 *FX4,1
  190 GCOL0,9:VDU29,640;512;
  200MOVE-10,0:DRAW-50,0:MOVE20,
0:DRAW60,0:MOVE0,10:DRAW0,50:MOV
E0,-10:DRAW0,-50
  210GCOL0,7:MOVE-150,100:MOVE-1
50,150:PLOT85,150,150:MOVE150,10
0:PLOT85,-150,100
  220MOVE-150,150:MOVE-130,150:P
LOT85,-150,-100:MOVE-100,-100:PL
OT85,-100,150
```

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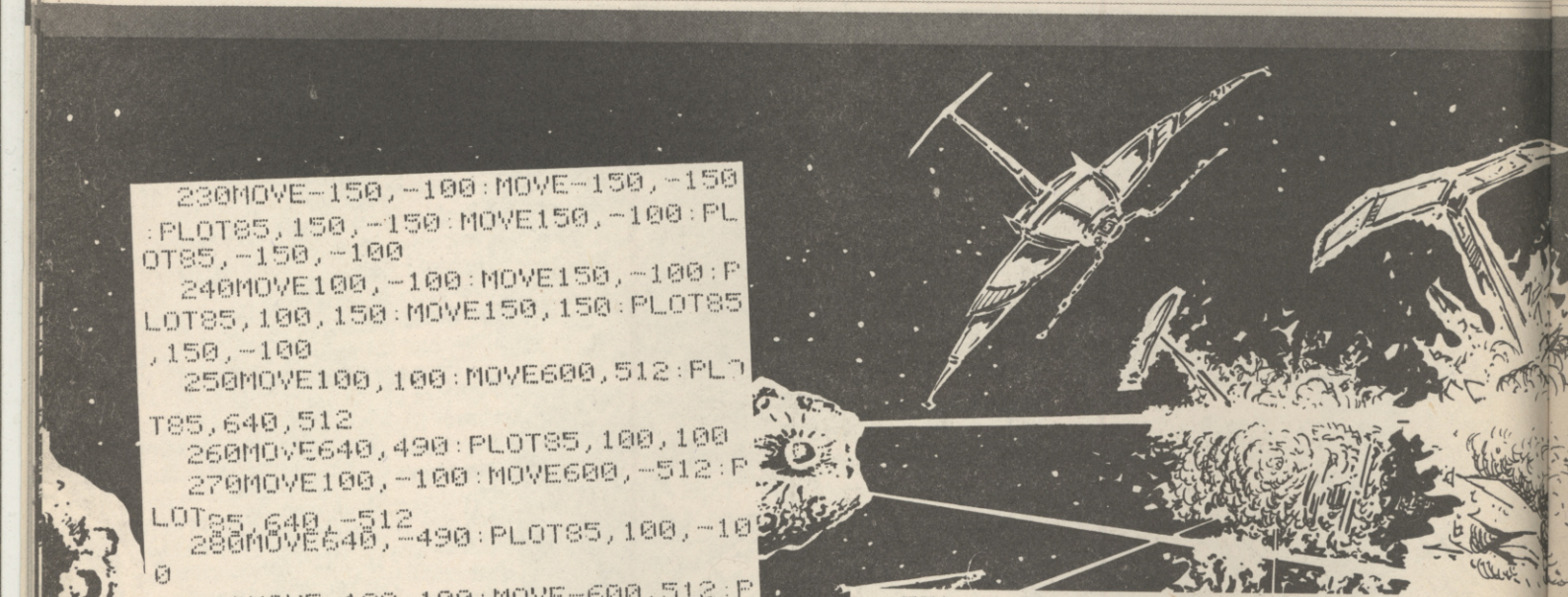


```
  230MOVE-150,-100:MOVE-150,-150
:PLOT85,150,-150:MOVE150,-100:PL
OT85,-150,-100
  240MOVE100,-100:MOVE150,-100:P
LOT85,100,150:MOVE150,150:PLOT85
,150,-100
  250MOVE100,100:MOVE600,512:PL
T85,640,512
  260MOVE640,490:PLOT85,100,100
  270MOVE100,-100:MOVE600,-512:P
LOT85,640,-512
  280MOVE640,-490:PLOT85,100,-10
0
  290MOVE-100,100:MOVE-600,512:P
LOT85,-640,512
  300MOVE-640,490:PLOT85,-100,10
0
  310MOVE-100,-100:MOVE-600,-512
:PLOT85,-640,-512:MOVE-640,-490:
PLOT85,-100,-100
  320FOR F%=1TO50:PLOT69,RND(128
0)-640,RND(1024)-512:NEXT
  330 FU%=4000-(100*SHEET)
  340 IF SHEET>3 THEN FU%=4000
  350 MOVE-640,-450:MOVE-640,-51
2:PLOT85,640,-450:MOVE640,-512:P
LOT85,-640,-512
  360 VDU4:COLOUR4:COLOUR135:PRI
NT TAB(0,30);"FUEL:";FU%;TAB(10,
30);"SCORE:";S%;
  370 VDU5
  380 MOVE-640,-512:DRAW-640,511
:DRAW639,511:DRAW639,-512
  390 FOR V%=1 TO 10
  400 D=RND(4)
  410 IF D=1 THEN A(V%)=2
  420 IF D>1 THEN A(V%)=1
  430 NEXT V%
  440 VDU19,8,7;3;:VDU19,15,3;0;
  450 FOR F%=1 TO 10
  460 MAX%=4+(SHEET DIV 3)
  470 L%=RND(2):IF L%=2 THEN X%=
-640 ELSE X%=640
  480 Y%=RND(1024)-512:MOVE X%,Y
%:GCOL4,3:PRINT CHR$(229+A(F%))
  490 GCOL0,0:MOVE-90,90:MOVE-90
,-90:PLOT85,90,90:PLOT85,90,-90:
PROCSIGHT
  500 *FX15,0
  510 REPEAT:PROCALIEN:PROCKEYS:
PROCKEYS:PROCKEYS:PROCF1
  520 UNTIL A(F%)=0 OR FU%<=0
  530 IF FU%<=0 THEN PROCEND
  540 *FX 15,0
  550 X%=0:Y%=0:X1%=X%:Y1%=Y%
  560 NEXT
  570 PROCHYPERSPACE
  580 GOTO 130
  590 DEFPROCALIEN
  600 DH%=RND(2):DV%=RND(2)
  610 X1%=X%:Y1%=Y%
  620 IF DV%=1 THEN  Y%=Y%+(35*A
(F%)+(SHEET*2))ELSE Y%=Y%-(35*A(
F%)+(SHEET*2))
  630 IF DH%=1 THEN X%=X%+(16*A(
F%)+(SHEET*2))ELSE X%=X%-(16*A(F
%)+(SHEET*2))
  640 IF X%<-620 THEN X%=-620
  650 IF X%>620 THEN X%=620
  660 IF Y%<-490 THEN Y%=-490
  670 IF Y%>500 THEN Y%=500
  680 MOVE X%,Y%:GCOL4,3:PRINT C
HR$(229+A(F%))
  690 MOVE X1%,Y1%:GCOL4,0:PRINT
CHR$(229+A(F%));
  700 IF A(F%)=1 THEN FP%=RND(30
):IF FP%<(1+SHEET) AND MAX%<>0 T
HEN PROCFIRE
  710 *FX15,0
  720 ENDPROC
  730 DEFPROCFIRE
  740 MAX%=MAX%-1
  750 ENVELOPE 1,129,-10,-20,-1,
20,20,-128,0,0,0,-1,126,0
  760 VDU19,3,10,0,0,0
  770 SOUND1,1,100,1
  780 EX1%=RND(200)-100:EY1%=RND
(200)-100:EX2%=RND(200)-100:EY2%
=RND(200)-100
  790 MOVE X%+32,Y%-16:GCOL4,14:
PLOT21,EX1%,EY1%:PRINTCHR$215:MO
VEX%+32,Y%-16:PLOT21,EX2%,EY2%:P
RINTCHR$217
```

```
  800 FOR G%=1 TO 1500:NEXT
  810 MOVEX%+32,Y%-16:GCOL4,0:PL
OT21,EX1%,EY1%:PRINTCHR$215:MOVE
X%+32,Y%-16:PLOT21,EX2%,EY2%:PRI
NTCHR$217
  820 SOUND0,1,6,1
  830 FOR G%=1 TO 10:VDU19,0,RND
(16)-1,0,0,0:VDU19,7,RND(16)-1,0
,0,0:FOR G1%=1 TO 1000:NEXT NEXT
:VDU19,0,0,0,0,0,0,19,7,7,0,0,0
  840 FU%=FU%-100:PROCFUEL:ENDPR
OC
  850 DEFPROCKEYS
  860 IF INKEY(-58) PROCMA(0,-16
)
  870 IF INKEY(-42) PROCMA(0,16)
  880 IF INKEY(-26) PROCMA(32,0)
  890 IF INKEY(-122) PROCMA(-32,
0)
  900 IF INKEY(-99) PROCFIRE1
  910 *FX15,0
  920 ENDPROC
  930 DEFPROCMA(X2%,Y2%)
  940 X1%=X%:Y1%=Y%
  950 X%=X%+X2%:Y%=Y%+Y2%
  960 MOVE X%,Y%:GCOL4,3:PRINT C
HR$(229+A(F%)):MOVEX1%,Y1%:GCOL4
,0:PRINT CHR$(229+A(F%))
  970 ENDPROC
  980 DEFPROCF1:FU%=FU%-1:PROCFU
EL:ENDPROC
  990DEFPROCFIRE1
 1000 MOVE -640,-100:GCOL4,1:DRA
W0,0:MOVE640,-100:DRAW0,0:SOUND2
,1,100,1:MOVE-640,-100:GCOL4,0:D
RAW0,0:MOVE640,-100:DRAW0,0
 1010 FU%=FU%-5:PROCFUEL
 1020 MOVE0,0:IF POINT(0,0)<>0 T
HEN PROCEXPLODE
 1030 ENDPROC
 1040DEF PROCSCORE:VDU4:PRINT TA
B(.0,30);"SCORE:";S%;:VDU5:ENDPR
OC
 1050DEFPROCFUEL:VDU4:PRINTTAB(0
,30);"FUEL:";"     ";TAB(5,30);FU
%;:VDU5:ENDPROC
 1060 DEFPROCEXPLODE:SOUND0,1,20
0,10:GCOL3,RND(16)-1:FOR G%=1 TO
 20:MOVE X%,Y%:PRINT CHR$(200+G%
):FOR G1%=1 TO 100:NEXT:NEXT:SOU
ND0,1,100,10:MOVE X%,Y%:GCOL0,0:
PRINT CHR$255:PLOT69,0,0
 1070 PROCSIGHT
 1080 IF A(F%)=1 THEN S%=S%+1
 1090 IF A(F%)=2 THEN S%=S%+10
 1100PROCSCORE:FOR G%=1 TO 4000:
NEXT
 1110 A(F%)=0
 1120 ENDPROC
 1130 DEFPROCSIGHT
 1140 GCOL0,9:MOVE-10,0:DRAW-50,
0:MOVE20,0:DRAW60,0:MOVE0,10:DRA
W0,50:MOVE0,-10:DRAW0,-50
 1150 ENDPROC
 1160 DEFPROCHYPERSPACE
 1170 S%=S%+FU% DIV 10:PROCFUEL
 1180 FOR I%=1 TO 30
 1190 VDU19,0,RND(16)-1,0,0,0
 1200 MOVE0,0:GCOL4,RND(16)-1:DR
AW640,512:MOVE0,0:DRAW640,256:MO
VE0,0:DRAW640,0:MOVE0,0:DRAW640,
-256:MOVE0,0:DRAW640,-512:MOVE0,
0:DRAW320,-512:MOVE0,0:DRAW0,-51
2:MOVE0,0:DRAW-320,-512:MOVE0,0:
DRAW-640,-512:MOVE0,0:DRAW-640,-
256:MOVE0,0
```

GAME: ZOMBIES

AUTHOR: MACER GIFFORD

RUNS ON: A VIC 20 IN 3.5K

Are you cunning enough to outwit the hoardes of evil Zombies out for your blood? Are you clever enough to avoid being eaten? Or are you stupid enough to attempt to head-butt one and end up as worms' meat at the bottom of a crevasse?! In any event the aim of this game is to lure the Zombies into strategically placed pits and trap them. You appear as a smiling face in the centre of an area full of nasty zombies and those all important pits. To win you must lure all the zombies into the pits — but beware — they always move straight towards you and may join in twos or threes to attack!

So a good strategy in this case is to lure them into a group and position yourself so all the zombies attacking you fall into one pit. A good trick if you can pull it off!

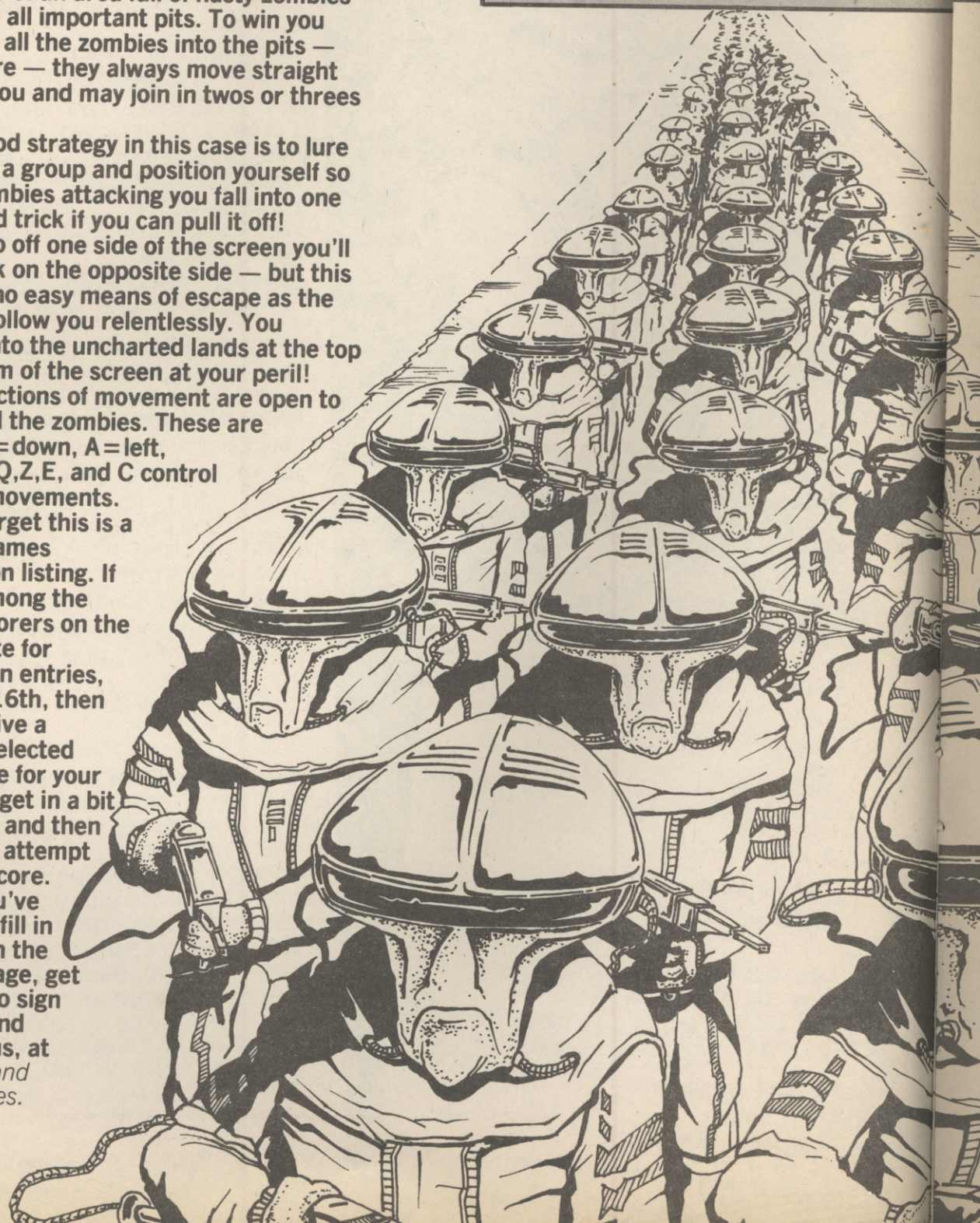
If you go off one side of the screen you'll come back on the opposite side — but this provides no easy means of escape as the zombies follow you relentlessly. You venture into the uncharted lands at the top and bottom of the screen at your peril! Eight directions of movement are open to you — and the zombies. These are W=up, X=down, A=left, D=right, Q,Z,E, and C control diagonal movements.

Don't forget this is a Book of Games competition listing. If you are among the top five scorers on the closing date for competition entries, February 16th, then you'll receive a specially selected games tape for your Vic-20. So get in a bit of practice and then make your attempt at a high score.

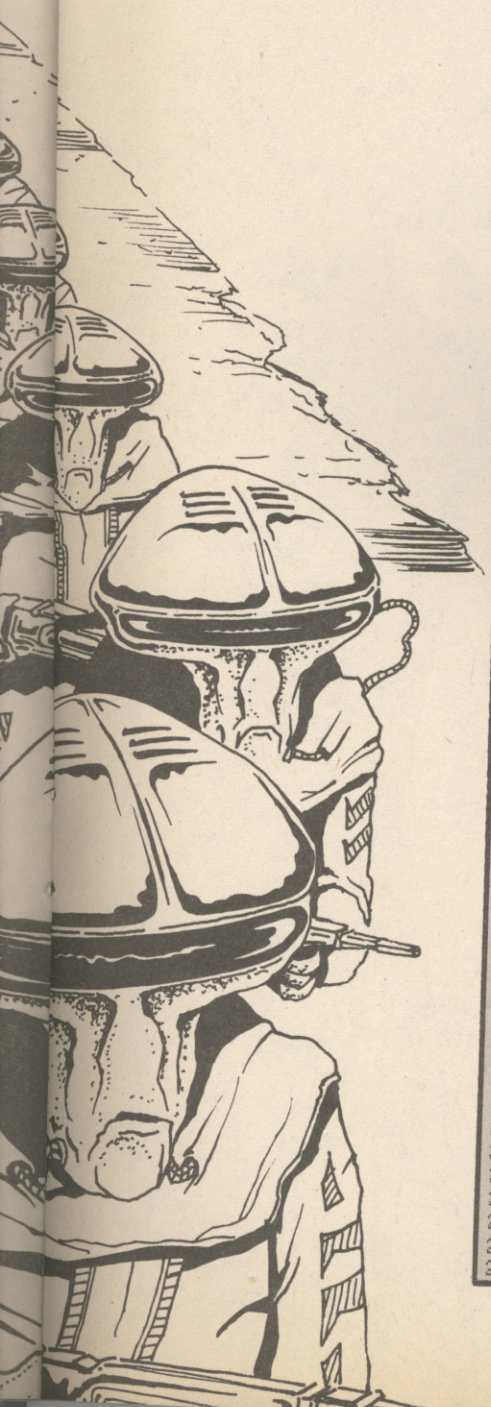
Once you've done that, fill in the form on the contents page, get a witness to sign it for you and send it to us, at *Computer and Video Games.*

Breakdown of the program:

Lines 5-40:	initialisation and preparation.
Lines 50-90:	position and draw zombies and pits.
Lines 130-180:	moves smiling face and checks for zombie or pit.
Lines 190-240:	moves zombies and checks for smiling face or pit.



Lines 400-420:	sound effects and scoring when zombie falls in pit.
Lines 500-715:	sound effects and message for player's death.
Lines 718-730:	plays tune.
Lines 740-770:	prints scores and prepares for another game.
Lines 2000-2080:	sets up user defined graphics.



```
 5 POKE36879,8
 10 PRINT"■■■
```

GAME: METEOR ATTACK

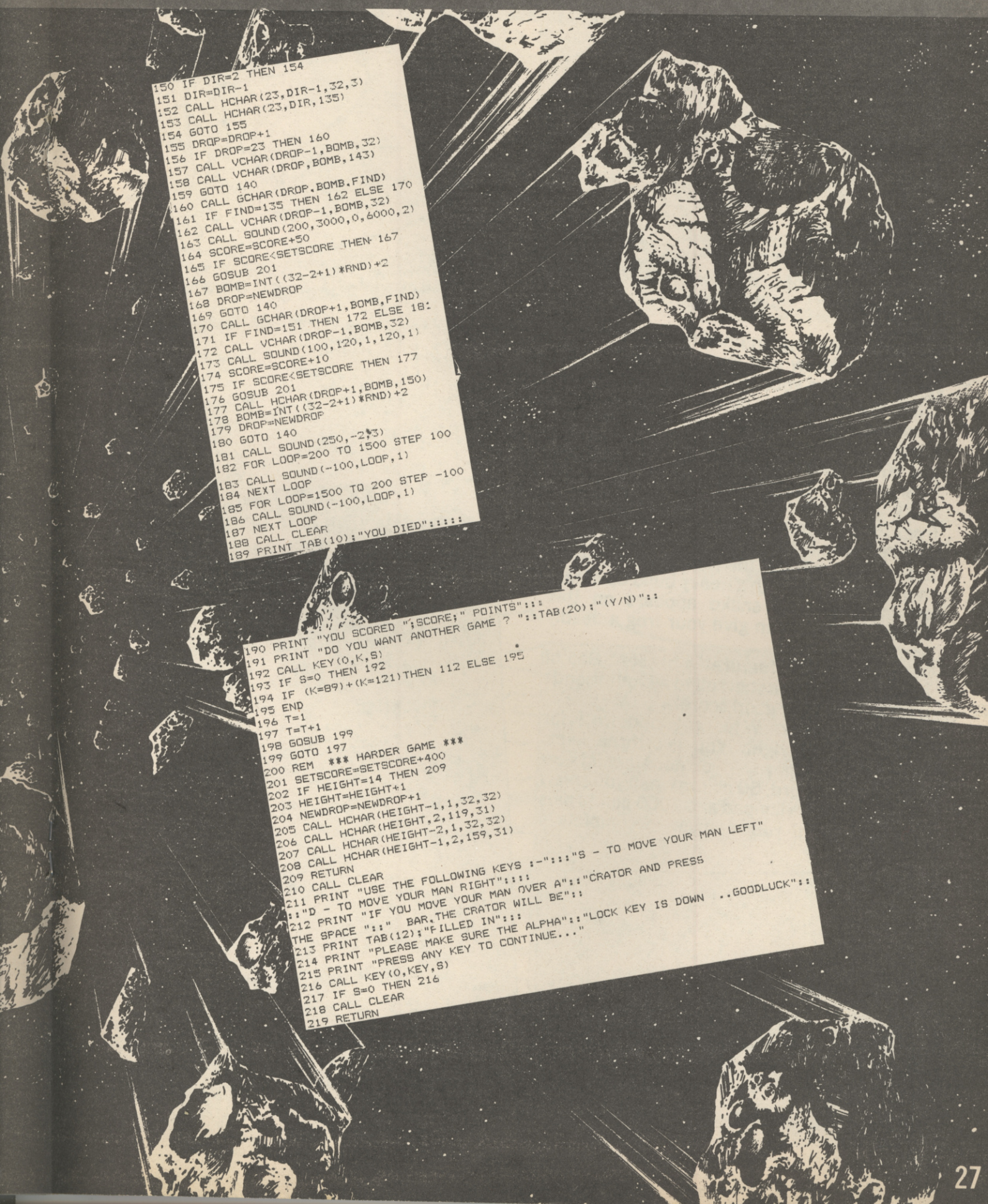
AUTHOR: PENNY ASPATURIAN

RUNS ON: A TEXAS TI 99/4A IN 14K

A bunch of unfriendly aliens have built a space platform which is in orbit around the earth. To make matters worse these creatures are dropping giant meteors on the planet. If two meteors strike the same spot then the earth is doomed! You are earth's only hope. With the arrow keys (S and D.Alpha Lock down!) move left and right and catch the falling space rocks. Any damage caused by a meteor can be repaired by moving your base ship over the crater and depressing the space bar. The space platform is in a decaying orbit and falls slowly closer to the earth — which makes the rocks harder to catch! Can you save our planet?

Variables:
Bomb:meteor column position.
Drop:meteor row position.
Newdrop:meteor drop height.
Setscore:speed at which space platform drops.
Dir:players' horizontal position.
Move:key pressed.
Find:view of character square.

```
100 CALL CLEAR
101 CALL CHAR(120,"30426DA1A16D423C")
102 CALL CHAR(120,"30426DA1A16D423C")
103 CALL SCREEN(12)
104 CALL SCREEN(12)
105 PRINT "*****************************":"* METEOR ATTACK                    *":"*
by penny aspaturian*"
106 PRINT "*****************************"::TAB(23);CHR$(120);" 1983"
107 PRINT ::::::::::"DO YOU REQUIRE INSTRUCTIONS"::TAB(22);"(Y/N)"
108 CALL KEY(0,K,S)
109 IF S=0 THEN 108
110 IF (K=121)+(K=89)THEN 111 ELSE 112
111 GOSUB 210
112 CALL CLEAR
113 RANDOMIZE
114 BOMB=INT((32-2+1)*RND)+2
115 DROP=4
116 NEWDROP=4
117 SCORE=0
118 SETSCORE=350
119 HEIGHT=2
120 DIR=16
121 CALL SCREEN(2)
122 CALL CHAR(159,"18187E5A183C2466")
123 CALL CHAR(151,"FFFFFFFFFFFFFFFF")
124 CALL CHAR(119,"FFC3A59999A5C3FF")
125 CALL CHAR(150,"C3C3C3C3C3C3FFFF")
126 CALL CHAR(143,"00183C7E7E3C1800")
127 CALL CHAR(135,"185A7E18183C2466")
128 CALL COLOR(16,5,1)
129 CALL COLOR(15,13,1)
130 CALL COLOR(14,9,1)
131 CALL COLOR(11,15,1)
132 FOR COLOUR=1 TO 8
133 CALL COLOR(COLOUR,16,1)
134 NEXT COLOUR
135 CALL HCHAR(24,2,151,31)
136 CALL COLOR(13,14,1)
137 CALL HCHAR(HEIGHT-1,2,159,31)
138 CALL HCHAR(HEIGHT,2,119,31)
139 CALL HCHAR(23,DIR,135)
140 CALL KEY(0,MOVE,S)
141 IF MOVE=83 THEN 150
142 IF MOVE=68 THEN 144
143 IF MOVE=32 THEN 147 ELSE 154
144 IF DIR=32 THEN 154
145 DIR=DIR+1
146 GOTO 152
147 CALL HCHAR(24,DIR,151)
148 CALL SOUND(70,-5,0)
149 GOTO 154
```



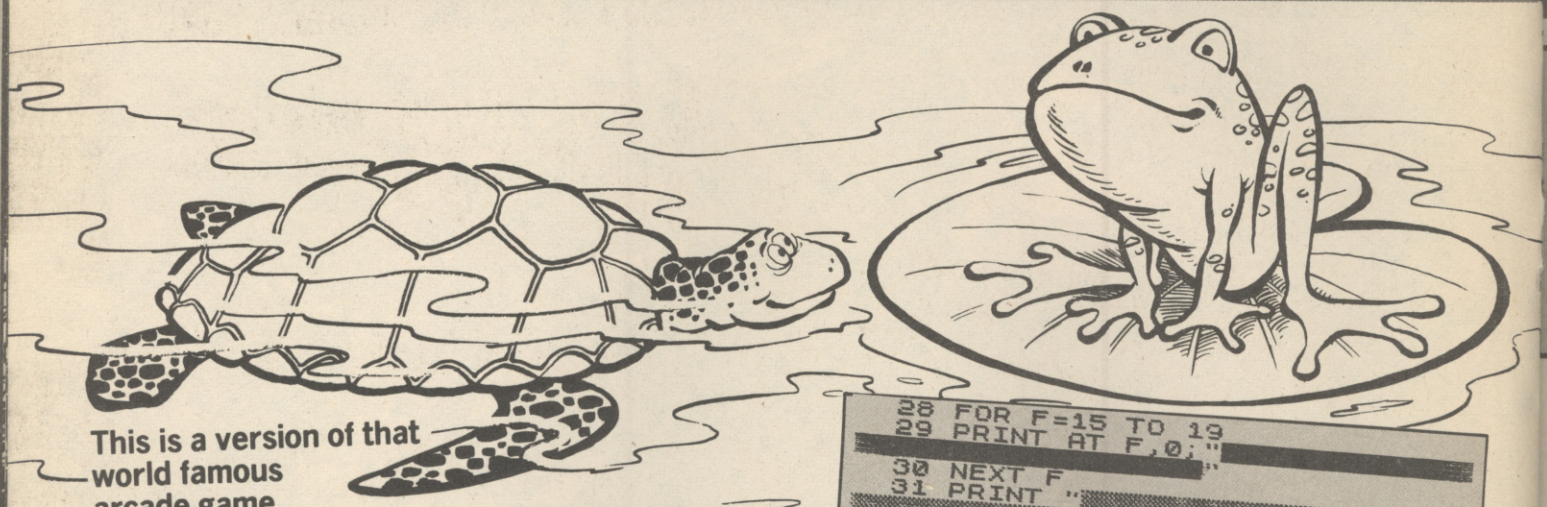
```
150 IF DIR=2 THEN 154
151 DIR=DIR-1
152 CALL HCHAR(23,DIR-1,32,3)
153 CALL HCHAR(23,DIR,135)
154 GOTO 155
155 DROP=DROP+1
156 IF DROP=23 THEN 160
157 CALL VCHAR(DROP-1,BOMB,32)
158 CALL VCHAR(DROP,BOMB,143)
159 GOTO 140
160 CALL GCHAR(DROP,BOMB,FIND)
161 IF FIND=135 THEN 162 ELSE 170
162 CALL VCHAR(DROP-1,BOMB,32)
163 CALL SOUND(200,3000,0,6000,2)
164 SCORE=SCORE+50
165 IF SCORE<SETSCORE THEN 167
166 GOSUB 201
167 BOMB=INT((32-2+1)*RND)+2
168 DROP=NEWDROP
169 GOTO 140
170 CALL GCHAR(DROP+1,BOMB,FIND)
171 IF FIND=151 THEN 172 ELSE 18:
172 CALL VCHAR(DROP-1,BOMB,32)
173 CALL SOUND(100,120,1,120,1)
174 SCORE=SCORE+10
175 IF SCORE<SETSCORE THEN 177
176 GOSUB 201
177 CALL HCHAR(DROP+1,BOMB,150)
178 BOMB=INT((32-2+1)*RND)+2
179 DROP=NEWDROP
180 GOTO 140
181 CALL SOUND(250,-2,3)
182 FOR LOOP=200 TO 1500 STEP 100
183 CALL SOUND(-100,LOOP,1)
184 NEXT LOOP
185 FOR LOOP=1500 TO 200 STEP -100
186 CALL SOUND(-100,LOOP,1)
187 NEXT LOOP
188 CALL CLEAR
189 PRINT TAB(10);"YOU DIED":::::
```

```
190 PRINT "YOU SCORED ";SCORE;" POINTS":::
191 PRINT "DO YOU WANT ANOTHER GAME ? "::TAB(20);"(Y/N)"::
192 CALL KEY(0,K,S)
193 IF S=0 THEN 192
194 IF (K=89)+(K=121)THEN 112 ELSE 195
195 END
196 T=1
197 T=T+1
198 GOSUB 199
199 GOTO 197
200 REM  *** HARDER GAME ***
201 SETSCORE=SETSCORE+400
202 IF HEIGHT=14 THEN 209
203 HEIGHT=HEIGHT+1
204 NEWDROP=NEWDROP+1
205 CALL HCHAR(HEIGHT-1,1,32,32)
206 CALL HCHAR(HEIGHT,2,119,31)
207 CALL HCHAR(HEIGHT-2,1,32,32)
208 CALL HCHAR(HEIGHT-1,2,159,31)
209 RETURN
210 CALL CLEAR
211 PRINT "USE THE FOLLOWING KEYS :-":::"S - TO MOVE YOUR MAN LEFT"
::"D - TO MOVE YOUR MAN RIGHT"::::
212 PRINT "IF YOU MOVE YOUR MAN OVER A"::"CRATOR AND PRESS
THE SPACE "::"  BAR,THE CRATOR WILL BE"::
213 PRINT TAB(12);"FILLED IN":::
214 PRINT "PLEASE MAKE SURE THE ALPHA"::"LOCK KEY IS DOWN  ..GOODLUCK"::
215 PRINT "PRESS ANY KEY TO CONTINUE..."
216 CALL KEY(0,KEY,S)
217 IF S=0 THEN 216
218 CALL CLEAR
219 RETURN
```

GAME: FROGGA

AUTHOR: MARK WHYSALL

RUNS ON: A 2 × 81 IN 16K



This is a version of that world famous arcade game featuring a leaping amphibian which you've all come to know and love. The aim of the game is to help your friendly frog reach the safety of a lily-pad. He does this by crossing a road and a river — helped out by turtles and floating logs. There is a clock which gives you just 90 seconds to negotiate the road and the river — if you don't make it in time then again you'll lose a life. When you have helped five frogs to safety you move onto the next screen.

Screen two is the same as the first screen, but on screen three the road becomes even more dangerous with a heavy build up of fast moving traffic. A snake appears on this screen — which can give your frog a deadly bite.

The game also features a hi-score Hall of Fame — so you can show off to all your friends if you get a really good score!

Control keys are: W for up, S for down, H for left and J for right. You get three lives. Scoring is as follows — you get 10 points for each leap forward, 50 points when you safely guide a frog to a lily-pad and 1000 points plus an extra life if you manage to complete a screen.

```
   1 LET H=0
   2 GOSUB 7000
   3 LET L=3
   4 LET LO=0
   5 LET P=1
   6 LET X=1
   8 LET X1=31
  10 LET P1=31
  11 LET S=0
  12 LET SC=1
  13 LET SS=0
  14 REM SETTING UP OF SCREEN
  15 PRINT AT 2,0;"                    =X=     =X=
=X=     =X=     =X=     "
  17 PRINT AT 2,12;"SCREEN ";CHR
$ (SC+156)
  27 PRINT AT 14,0;"                    "
  28 FOR F=15 TO 19
  29 PRINT AT F,0;"                    "
  30 NEXT F
  31 PRINT "                    "
  32 LET PP=8
  33 LET A=PEEK 16396+256*PEEK 1
6397+676
  34 LET ZZ=PEEK 16396+256*PEEK
16397+136
  35 PRINT AT 0,0;" SCORE-";S;AT
 0,12;"HIGH-";H;AT 0,23;"LIVES-"
;L
  37 LET TT=30
  40 PRINT AT 1,9;"BY """;N$;"""
"
  45 PRINT AT 21,0;"TIME                    "
  47 REM SETTING UP OF ROAD
  50 LET E$="II      II   II  I      I
II   II     II   II      II   II  I      I
II   II     II   "
  55 IF SC>2 THEN LET E$="  IIII
IIII     IIII  I     II   III     IIII
IIII     IIII  I     II   III     "
  60 POKE A,151
  62 PRINT AT 20,0;"                    "
  63 PRINT AT 14,0;"                    "
  64 REM MOVEMENT OF E$ FOR TRAF
FIC
  65 PRINT AT 16,0;E$(P TO P+30)
  70 PRINT AT 18,0;E$(P1 TO P1+3
0)
  75 LET P=P+1
  80 LET P1=P1-1
  85 IF P=31 THEN LET P=1
  90 IF P1=0 THEN LET P1=33
 190 REM SETTING UP OF RIVER
 200 LET A$="                    "
 220 LET B$="0000      0000      000
0     0000      0000      0000      000
0     0000      "
 250 IF RND>.5 THEN LET B$="0000
    ++++      0000      ++++      0000
    ++++      0000      ++++      "
 260 LET C$="                    "
 300 LET D$="      0000      0000
0000      0000      0000      0000
0000      0000"
 310 IF RND>.5 THEN LET D$="
0000      ++++      0000      ++++
0000      ++++      0000      ++++"
 340 REM MOVEMENT OF LOGS AND TU
RTLES
 350 PRINT AT 6,0;A$(X TO X+30)
 370 PRINT AT 8,0;B$(X1 TO X1+30
)
 390 PRINT AT 10,0;C$(X TO X+30)
 410 PRINT AT 12,0;D$(X1 TO X1+3
0)
 415 REM MOVEMENT OF SNAKE ON RI
VER BANK
 420 IF SC>2 THEN PRINT AT 14,SS
;"S"
```

```
430 LET SS=SS+1
440 IF SS=31 THEN LET SS=0
450 LET X=X+1
470 LET X1=X1-1
490 IF X=31 THEN LET X=1
510 IF X1=0 THEN LET X1=33
550 LET NN=PEEK A
560 LET PP=NN
570 IF NN=0 THEN GOTO 2000
575 IF NN=184 THEN GOTO 2000
580 IF NN=46 THEN GOTO 2000
585 IF NN=21 THEN GOTO 2000
587 REM CHECK TO SEE IF FROG HA
S LANDED ON LILY PAD
590 IF A=ZZ THEN GOTO 4000
595 IF A>ZZ AND A<(ZZ+6) THEN G
OTO 2000
600 IF A=(ZZ+6) THEN GOTO 4000
605 IF A>(ZZ+6) AND A<(ZZ+12) T
HEN GOTO 2000
```

```
610 IF A=(ZZ+12) THEN GOTO 4000
615 IF A>(ZZ+12) AND A<(ZZ+18)
THEN GOTO 2000
620 IF A=(ZZ+18) THEN GOTO 4000
625 IF A>(ZZ+18) AND A<(ZZ+24)
THEN GOTO 2000
630 IF A=(ZZ+24) THEN GOTO 4000
635 IF A>(ZZ+24) AND A<=(ZZ+27)
THEN GOTO 2000
650 IF NN=52 THEN LET A=A+1
660 IF NN=136 THEN LET A=A-1
920 LET K=A
925 REM KEYS FOR MOVEMENT OF FR
OG
930 IF INKEY$="H" THEN LET K=K-
2
940 IF INKEY$="J" THEN LET K=K+
2
950 IF INKEY$="U" THEN LET K=K-
56
960 IF INKEY$="S" THEN LET K=K+
55
970 IF INKEY$="U" THEN LET S=S+
10
980 LET A=K
990 POKE A,151
995 POKE A,PP
1000 LET TT=TT-(1/2)
1010 PRINT AT 21,TT;" "
1020 IF TT=5 THEN GOTO 1900
1100 GOTO 60
1900 POKE A,189
1905 FOR T=0 TO 30
1910 PRINT AT 21,0;"TIME";AT 21,
0;"TIME"
1920 NEXT T
2000 REM DEAD FROG
2005 FOR T=0 TO 10
2010 POKE A,189
2020 NEXT T
2040 LET L=L-1
2050 IF L=0 THEN GOTO 5000
2060 LET A=PEEK 16396+256*PEEK 1
6397+676
2090 GOTO 35
4000 REM FROG REACHED LILYPAD
4005 LET S=S+50
4010 LET LO=LO+1
4020 POKE A-1,33
4030 POKE A,28
```

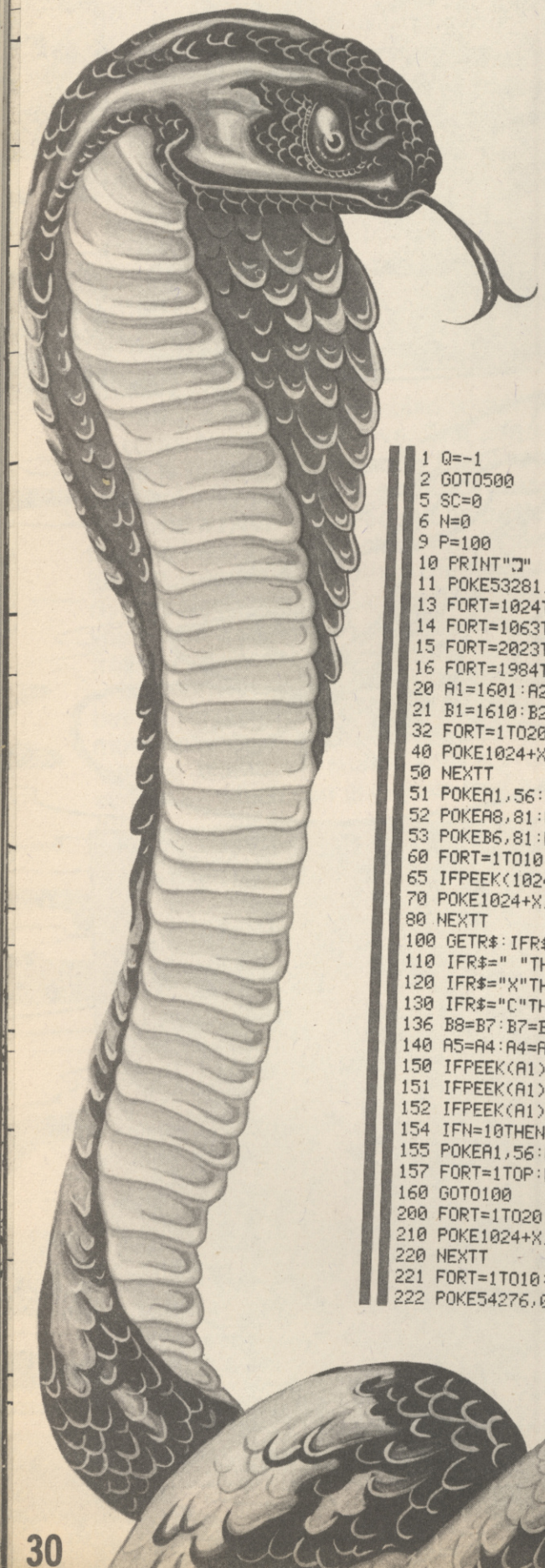
```
4040 POKE A+1,27
4050 IF LO=5 THEN GOTO 4100
4070 GOTO 32
4100 REM BONUS FOR E FROGSHOME
4105 PRINT AT 16,0;"          1000 PO
INT BONUS FOR 5          "
4110 PRINT AT 18,0;"          FR
OGS HOME.          "
4120 LET S=S+1000
4130 PRINT AT 0,7;S
4140 FOR T=0 TO 100
4150 NEXT T
4155 LET LO=0
4160 LET SC=SC+1
4170 LET L=L+1
4180 GOTO 15
5000 REM GAME OVER ROUTINE
5005 CLS
5010 PRINT AT 3,0;"          GAME
 OVER          ----
-----"
5020 IF S>H THEN GOTO 5400
```

```
5030 PRINT AT 7,0;"YOUR FINAL SC
ORE WAS ";S
5040 PRINT AT 19,0;"     ANOTHER
GAME (Y OR N)"
5050 INPUT M$
5060 IF M$="" THEN GOTO 5050
5070 IF M$="Y" THEN GOTO 6000
5080 IF M$<>"Y" THEN STOP
5400 REM ENTERING NAME OF HIGH S
CORE GETTER
5410 LET H=S
5500 PRINT AT 5,0;"  WELL DONE Y
OU HAVE ATTAINED   TODAYS HIGHES
T SCORE SO FAR."
5510 PRINT AT 8,0;"          INPUT
 YOUR NAME          (MAX OF
 10 LETTERS)"
5520 INPUT N$
5530 IF LEN N$>10 THEN GOTO 5520
5540 PRINT AT 15,0;"A SCORE OF "
;H;"  BY--";N$
5550 GOTO 5040
6000 CLS
6010 GOTO 3
7000 PRINT AT 3,4;"
FROGGA
"
7010 PRINT AT 9,9;"BY M. WHYSALL
"
7015 PRINT AT 18,2;"PRESS N/L TO
 PLAY ""FROGGA""."
7020 INPUT L$
7025 LET N$="??????????"
7040 IF L$="" THEN GOTO 7100
7100 CLS
7500 RETURN
9000 SAVE "FROGG"
9010 GOTO 1
```

GAME: SNAKES 64

AUTHOR: JUSTIN VETTA

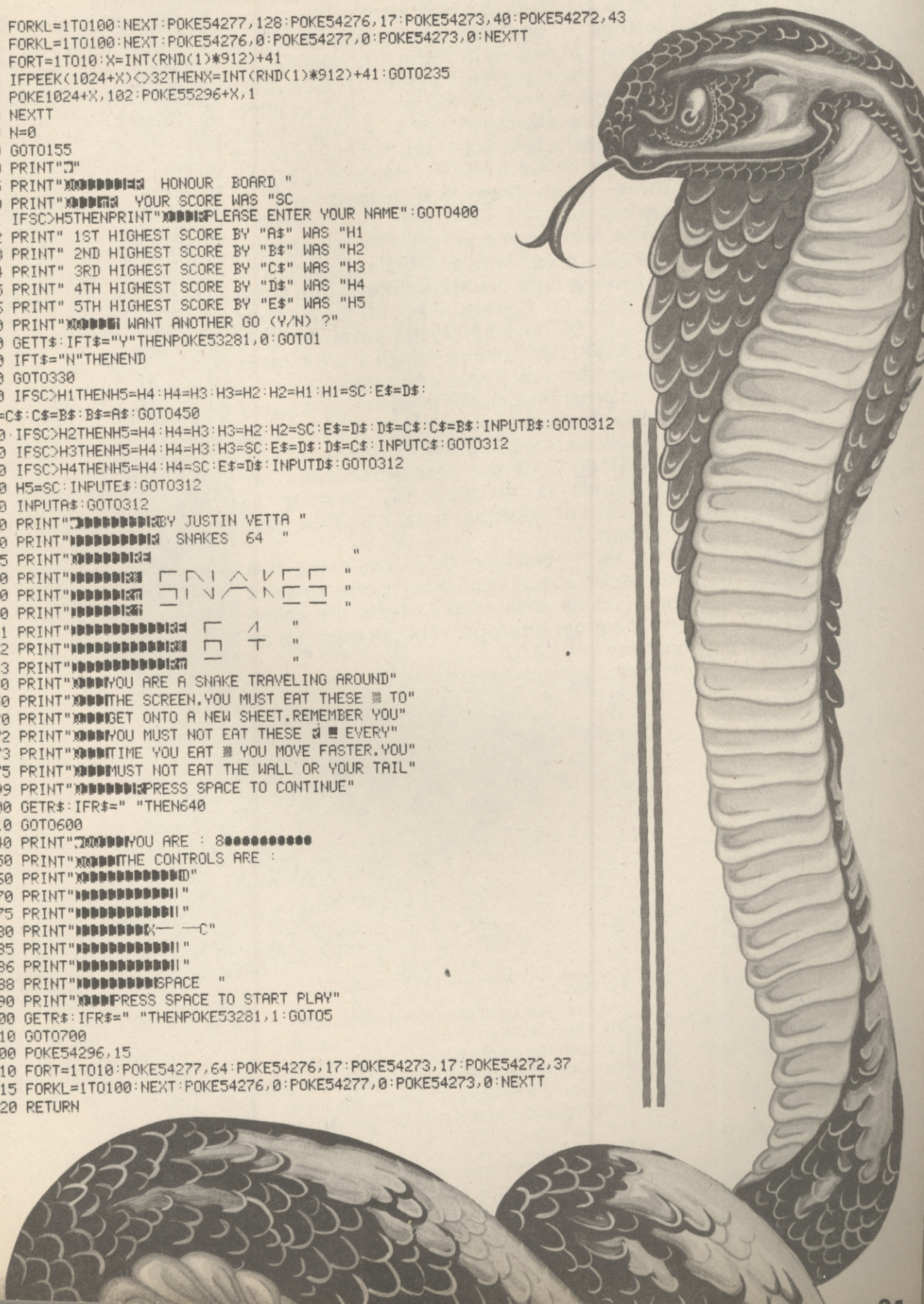
RUNS ON: A COMMODORE 64



You have to be a really slippery customer to master Sid the Snake. He zaps around the screen eating tasty snacks as he goes — and growing longer all the time. Sid moves faster after each meal and it requires split second timing to control him. You must keep Sid clear of the walls — and there are some poisonous morsels dotted around among Sid's snake food which he must not eat. You must also stop Sid running into his own tail — a difficult task as he grows longer and longer. Control Sid using D for up, Space for down, X for left and C for right. Full instructions are included in the program.

```
1 Q=-1
2 GOTO500
5 SC=0
6 N=0
9 P=100
10 PRINT"□"
11 POKE53281,0
13 FORT=1024TO1063:POKET,160:NEXT
14 FORT=1063TO2023STEP40:POKET,160:NEXT
15 FORT=2023TO1984STEP-1:POKET,160:NEXT
16 FORT=1984TO1024STEP-40:POKET,160:NEXT
20 A1=1601:A2=1602:A3=1603:A4=1604:A5=1605:A6=1606:A7=1607:A8=1608:A9=1609
21 B1=1610:B2=1611:B3=1612:B4=1613:B5=1614:B6=1615:B7=1616:B8=1617
32 FORT=1TO20:X=INT(RND(1)*954)+41
40 POKE1024+X,160
50 NEXTT
51 POKEA1,56:POKEA2,81:POKEA3,81:POKEA4,81:POKEA5,81:POKEA6,81:POKEA7,81
52 POKEA8,81:POKEA9,81:POKEB1,81:POKEB2,81:POKEB3,81:POKEB4,81:POKEB5,81
53 POKEB6,81:POKEB7,81:POKEB8,32
60 FORT=1TO10:X=INT(RND(1)*912)+41
65 IFPEEK(1024+X)<>32THENX=INT(RND(1)*912)+41:GOTO65
70 POKE1024+X,102:POKE55296+X,1
80 NEXTT
100 GETR$:IFR$="D"THENQ=-40
110 IFR$=" "THENQ=40
120 IFR$="X"THENQ=-1
130 IFR$="C"THENQ=1
136 B8=B7:B7=B6:B6=B5:B5=B4:B4=B3:B3=B2:B2=B1:B1=A9:A9=A8:A8=A7:A7=A6:A6=A5
140 A5=A4:A4=A3:A3=A2:A2=A1:A1=A1+Q
150 IFPEEK(A1)=160THEN300
151 IFPEEK(A1)=81THEN300
152 IFPEEK(A1)=102THENSC=SC+10:N=N+1:P=P-5:GOSUB800
154 IFN=10THEN200
155 POKEA1,56:POKEA2,81:POKEB8,32
157 FORT=1TOP:NEXT
160 GOTO100
200 FORT=1TO20:X=INT(RND(1)*959)+40
210 POKE1024+X,160
220 NEXTT
221 FORT=1TO10:POKE54277,64:POKE54276,17:POKE54273,17:POKE54272,37
222 POKE54276,0:POKE54277,0:POKE54273,0
```

```
223 FORKL=1TO100:NEXT:POKE54277,128:POKE54276,17:POKE54273,40:POKE54272,43
225 FORKL=1TO100:NEXT:POKE54276,0:POKE54277,0:POKE54273,0:NEXTT
230 FORT=1TO10:X=INT(RND(1)*912)+41
235 IFPEEK(1024+X)<>32THENX=INT(RND(1)*912)+41:GOTO235
240 POKE1024+X,102:POKE55296+X,1
250 NEXTT
260 N=0
270 GOTO155
300 PRINT"■"
305 PRINT"■■■■■■■■■■■  HONOUR  BOARD "
310 PRINT"■■■■■■■  YOUR SCORE WAS "SC
311 IFSC>H5THENPRINT"■■■■■■PLEASE ENTER YOUR NAME":GOTO400
312 PRINT" 1ST HIGHEST SCORE BY "A$" WAS "H1
313 PRINT" 2ND HIGHEST SCORE BY "B$" WAS "H2
314 PRINT" 3RD HIGHEST SCORE BY "C$" WAS "H3
315 PRINT" 4TH HIGHEST SCORE BY "D$" WAS "H4
316 PRINT" 5TH HIGHEST SCORE BY "E$" WAS "H5
320 PRINT"■■■■■■■ WANT ANOTHER GO (Y/N) ?"
330 GETT$:IFT$="Y"THENPOKE53281,0:GOTO1
340 IFT$="N"THENEND
350 GOTO330
400 IFSC>H1THENH5=H4:H4=H3:H3=H2:H2=H1:H1=SC:E$=D$:
D$=C$:C$=B$:B$=A$:GOTO450
410 IFSC>H2THENH5=H4:H4=H3:H3=H2:H2=SC:E$=D$:D$=C$:C$=B$:INPUTB$:GOTO312
420 IFSC>H3THENH5=H4:H4=H3:H3=SC:E$=D$:D$=C$:INPUTC$:GOTO312
430 IFSC>H4THENH5=H4:H4=SC:E$=D$:INPUTD$:GOTO312
440 H5=SC:INPUTE$:GOTO312
450 INPUTA$:GOTO312
500 PRINT"■■■■■■■■■■■BY JUSTIN VETTA "
510 PRINT"■■■■■■■■■■■  SNAKES  64  "
515 PRINT"■■■■■■■■■■                    "
520 PRINT"■■■■■■■■■  ┌┐┌┐ ┌┐ ┌┐┌┐┌┐  "
530 PRINT"■■■■■■■■■  ├┘│└┤ ├┤ ├┘└┐└┐  "
540 PRINT"■■■■■■■■■  ┘ └┘ └┘ └┘ └┘┘┘  "
541 PRINT"■■■■■■■■■■■■■■  ┌┐  ┌┐   "
542 PRINT"■■■■■■■■■■■■■■  ├┤  ┴┴   "
543 PRINT"■■■■■■■■■■■■■■  └┘       "
550 PRINT"■■■■YOU ARE A SNAKE TRAVELING AROUND"
560 PRINT"■■■■THE SCREEN.YOU MUST EAT THESE ▒ TO"
570 PRINT"■■■■GET ONTO A NEW SHEET.REMEMBER YOU"
572 PRINT"■■■■YOU MUST NOT EAT THESE ■ EVERY"
573 PRINT"■■■■TIME YOU EAT ▒ YOU MOVE FASTER.YOU"
575 PRINT"■■■■MUST NOT EAT THE WALL OR YOUR TAIL"
599 PRINT"■■■■■■■■PRESS SPACE TO CONTINUE"
600 GETR$:IFR$=" "THEN640
610 GOTO600
640 PRINT"■■■■■■YOU ARE : 8●●●●●●●●●●●
650 PRINT"■■■■■THE CONTROLS ARE :
660 PRINT"■■■■■■■■■■■■■■D"
670 PRINT"■■■■■■■■■■■■■■I"
675 PRINT"■■■■■■■■■■■■■■I"
680 PRINT"■■■■■■■■■X── ──C"
685 PRINT"■■■■■■■■■■■■■■I"
686 PRINT"■■■■■■■■■■■■■■I"
688 PRINT"■■■■■■■■■■SPACE  "
690 PRINT"■■■■PRESS SPACE TO START PLAY"
700 GETR$:IFR$=" "THENPOKE53281,1:GOTO5
710 GOTO700
800 POKE54296,15
810 FORT=1TO10:POKE54277,64:POKE54276,17:POKE54273,17:POKE54272,37
815 FORKL=1TO100:NEXT:POKE54276,0:POKE54277,0:POKE54273,0:NEXTT
820 RETURN
```



GAME: CAVERN BLAST

AUTHOR: PETER FOTHERGILL

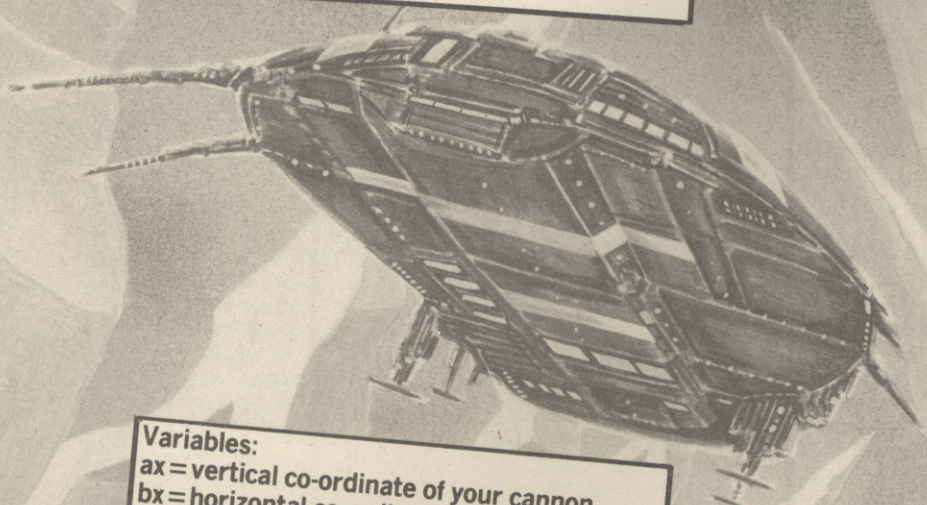
RUNS ON: A SPECTRUM IN 16K

Aliens have discovered your underground fortress — and they are making an all out attempt to destroy it. You are the commander of the fortress defence systems and control a laser blaster which you must use to shoot down the attacking aliens. A force shield protects the fortress — and you must protect the force shield. If an alien manages to blast it three times then the fortress will be destroyed.

The aliens come in two different shapes. The slow, green ones are battle cruisers. The fast yellow ones are star-fighters. You score 30 points for a green alien, 50 for a yellow one. At 1,000 and 2,500 you'll get an extra life plus a 200 point bonus. A high score table is included to record your best efforts.

The program includes machine code sound effects. These are poked in from lines 75 to 90 and called using LET L = USR 65000 and LET 1 = USR 65030. From these two calls an array of sounds is produced by pokeing in subsequent numbers throughout the program.

On levels two and three when the two millipedes appear and drop bombs some of the machine code sound effects are called and the program stops. This can be cured by omitting line 3270.



Variables:
ax = vertical co-ordinate of your cannon.
bx = horizontal co-ordinate of your cannon.
cx = vertical co-ordinate of fast alien ship.
dx = horizontal co-ordinates of fast alien ship.
ex = vertical co-ordinate of slow alien ship.
fx = horizontal co-ordinate of slow alien ship.
sc = score.
li = lives left.

```
    2 REM
LS  5 BORDER 0: PAPER 0: INK 7: C
    9 REM Data for UDGs
   10 FOR f=0 TO 7: FOR g=0 TO 7:
 READ a: POKE USR CHR$ (144+f)+9
,a: NEXT g: NEXT f
   20 DATA 192,240,80,127,127,80,
240,192
   30 DATA 0,0,0,255,255,0,0,0
   40 DATA 0,1,31,99,127,31,1,0
   50 DATA 48,248,24,238,238,24,2
48,48
   60 DATA 24,73,214,143,47,216,3
4,24
   70 DATA 0,12,62,199,255,62,12,
0
   80 DATA 15,62,124,216,216,124,
62,15
   90 DATA 255,1,1,1,1,1,1,255
  499 REM Game Instructions
  500 PRINT AT 3,0;"YOU COMMAND A
 LONE LASER CANNON WHICH PROTECT
S A HIDDEN FORTRESSDEEP INSIDE A
 CAVERN.BY MOVING   YOUR CANNON U
P AND DOWN THE      FORTRESS ENER
GY SHIELD YOU MUST  BLAST THE ATT
ACKING ALIENS.IF    THEY HIT THE
SHIELD YOU LOSE A   LIFE.WHEN THE
Y HIT THREE TIMES   THE FORTRESS
IS DESTROYED!!!"
  510 PRINT AT 13,0; INK 6;" UP="
"Q"" DOWN=""Z"" FIRE=""P"""
  515 PRINT AT 14,0; INK 6;"
   HOLD=""H"" ",0; INK 6;"
  520 PRINT AT 16,0; INK 3;"   30
POINTS      50 POINTS"
  530 PRINT AT 16,0; INK 4;"◄"
  540 PRINT AT 16,13; INK 6;"►"
  545 PRINT AT 17,0; INK 6;"Bonus
Cannon at 1000 points";AT 18,12
;"and 2500 points"
  550 PRINT AT 19,3; PAPER 1;"PRE
SS A KEY TO START"
  560 PRINT AT 21,1; INK 3;"© PET
ER FOTHERGILL 1983."
  570 FOR F=2 TO 5
  580 PRINT AT 0,0; INK f;"CAVERN BLAST"
  590 IF INKEY$<>"" THEN CLS : GO
TO 1000
  595 PAUSE 14
  600 NEXT f
  610 GO TO 570
  999 REM Cavern scenery
 1000 FOR f=5 TO 16
 1005 BEEP .005,20
 1010 PRINT AT f,0; INK 6; PAPER
1;"▌"
 1020 NEXT f
 1030 FOR f=0 TO 255
 1040 PLOT INK 2;f,175
 1050 DRAW INK 2;0,RND*-30+-9
 1051 PLOT INK 2;f,0
 1055 DRAW INK 2;0,RND*36+3
 1060 NEXT f
 1199 REM Variables
 1200 LET ax=12
 1210 LET bx=1
 1220 LET cx=INT (RND*10)+6
 1230 LET dx=28
 1232 LET ex=INT (RND*10)+6
 1235 LET fx=28
 1240 LET sc=0
 1250 LET li=3
 1290 FOR g=0 TO 20 STEP 5
 1300 FOR f=-10 TO 0 STEP 3: BEEP
 .01,f+g: NEXT f
 1310 PAUSE 3: NEXT g
 1499 REM Main Loop
 1500 PRINT AT ax,bx; INK 5;"►"
 1510 IF INKEY$="q" AND ax>5 THEN
 LET ax=ax-1: BEEP .001,60: PRIN
T AT ax+1,bx;" "
 1520 IF INKEY$="z" AND ax<16 THE
N LET ax=ax+1: BEEP .001,66: PRI
NT AT ax-1,bx;" "
 1530 IF INKEY$="p" THEN GO SUB 3
000
 1540 IF INKEY$="h" THEN PAUSE 0
 1600 PRINT AT cx,dx; INK 6;"◄"
 1605 PRINT AT ex,fx; INK 4;"◄"
 1610 LET dx=dx-2
 1620 LET fx=fx-1
 1630 IF dx=0 THEN GO SUB 3500
 1634 IF fx=0 THEN GO SUB 3500
 1700 IF sc>1000 AND sc<1100 THEN
 GO SUB 3700
 1710 IF sc>2500 AND sc<2600 THEN
 GO SUB 3700
 1990 PRINT AT 0,0; PAPER 2;"SCOR
E ";sc;AT 0,25;"LIVES ";li
 2000 GO TO 1500
 2550 NEXT g: NEXT f
 3000 FOR f=1 TO 29 STEP 3
 3010 PRINT AT ax,bx+f; INK 1;"▬
▬"
 3020 NEXT f
 3025 BEEP .004,20: BEEP .004,40
 3030 PRINT AT ax,bx+1;"
"
 3040 IF ax=cx THEN PRINT AT cx,d
x; INK 6; PAPER 2;"✱": FOR f=0
TO 4: BEEP .001,55: NEXT f: LET
 sc=sc+50: PRINT AT cx,dx;" ": L
ET cx=INT (RND*10)+6: LET dx=28
 3050 IF ax=ex THEN PRINT AT ex,f
x; INK 6; PAPER 2;"✱": FOR f=0
TO 4: BEEP .001,55: NEXT f: LET
 sc=sc+30: PRINT AT ex,fx;" ": L
ET ex=INT (RND*10)+6: LET fx=28
 3100 RETURN
 3500 LET li=li-1
 3510 PRINT AT 0,31; PAPER 2; FLA
SH 1;li
 3520 FOR f=0 TO 5
 3530 FOR g=7 TO 1 STEP -1
 3540 PRINT AT ax,bx; INK g;"►"
 3545 BEEP .001,g+55
 3550 NEXT g: NEXT f
 3555 PRINT AT cx,dx+1;"  "
 3556 PRINT AT ex,fx+1;"  "
 3560 IF li=0 THEN GO TO 4000
 3580 LET dx=28
 3584 LET fx=28
 3600 RETURN
 3700 PRINT AT 11,5; PAPER 2;"BON
US GUN"; INK 5;" + "; INK 4;"BONUS
 POINTS"; INK 6;"200 p
 3705 FOR n=0 TO 1
 3710 FOR g=0 TO 40 STEP 4
 3720 FOR f=0 TO 15 STEP 4
 3730 BEEP .02,f+g: NEXT f: NEXT
g
 3740 NEXT n
 3750 LET li=li+1
 3760 FOR f=1 TO 40: LET sc=sc+5:
 BEEP .001,45: PRINT AT 0,6; PAP
ER 2;sc: NEXT f
 3770 FOR f=5 TO 27
 3780 PRINT AT 11,f;" ": NEXT f
 3790 PRINT AT cx,dx;"  ";AT ex
,fx;"  ";AT ex
 3800 LET dx=28: LET fx=28
 3810 RETURN
 4000 PRINT AT 10,7;"G A M E  O V
 E R"
 4001 FOR f=0 TO 100: BORDER 7: O
UT 34300,20: BORDER 0: NEXT f
 4002 FOR f=0 TO 100: BORDER 7: O
UT 34350,100: OUT 34300,20: BORD
ER 0: NEXT f
 4005 FOR f=0 TO 1
 4010 BEEP .1,-30: BEEP .1,-20: B
EEP .1,-17: BEEP .1,-23
 4015 NEXT f
 4020 PRINT AT 12,3;"CAVERN FORTR
ESS DESTROYED."
 4030 FOR f=-15 TO -35 STEP -5
 4040 BEEP .13,f
 4050 NEXT f
 4060 PRINT AT 14,7;"YOU HAVE FAI
LED!!"
 4070 FOR f=0 TO 55
 4080 BEEP .005,10: BEEP .005,20:
 BEEP .005,0
 4090 NEXT f
 4100 CLS : GO TO 500
 9000 REM  USER DEFINED GRAPHICS
    A = ►  B = ▬  CD = ◄

    E = ✱ FG = ◄▬  H = ▐

 9999 SAVE "CAVERN" LINE 1
```

GAME: MILLIMAN

AUTHOR: IAN JAMIESON

RUNS ON: A SPECTRUM IN 16K

```
  5 CLEAR 64999
 10 FOR n=0 TO 15*8-1
 20 READ a: POKE USR "a"+n,a
 30 NEXT n
 40 DATA 60,126,255,a,a,a,126,6
0
 42 DATA a,118,255,240,a,255,12
6,60
 44 DATA 24,a,219,126,a,60,a,0
 46 DATA 60,110,255,15,a,255,12
6,60
 48 DATA 0,126,129,195,255,a,12
6,60
 50 DATA 0,96,159,151,101,0,0,0
 52 DATA 1,3,7,15,31,63,127,255
 54 DATA 128,192,224,240,248,25
2,254,255
 60 DATA 146,84,56,254,56,84,14
8,0
 64 DATA 0,28,62,28,34,65,34,28
 66 DATA 40,56,16,56,a,a,a,16
 68 DATA 28,a,8,127,93,a,20,54
 70 DATA 12,12,25,126,88,60,98,
67
 72 DATA 24,88,72,126,26,60,70,
194
 74 DATA 60,126,219,255,231,231
,102,36
 75 FOR n=65000 TO 65028
 76 READ a: POKE n,a: POKE n+30
,a
 78 NEXT n
 80 FOR n=1 TO 14: READ a,b
 82 POKE a,b: NEXT n
 85 DATA 6,20,197,33,0,3,17,1,0
,229,205,181,3,225,17,16,0,167,2
37,82,32,240,193,16,233,201,0,0,
0
 90 DATA 65031,1,65034,15,65035
,1,65045,100,65049,90,a+1,125,a+
1,254,a+1,255,a+1,32,a+1,237,a+1
,193,a+1,16,a+1,230,a+1,201
 98 LET a=0
 99 REM ############
100 LET rg=0: LET c=1
102 LET ti=3
105 LET bk=0: LET cr=0
110 LET x=1: LET y=27
130 RESTORE 135
132 READ a$
136 DATA "[illegible]"
137 LET sc=0
140 LET mv=1: LET ml=0: LET ky=
0
141 LET pc=4
142 LET ti=5: LET py=0
144 LET pa=1
145 IF a=1 THEN GO TO 195
150 DIM h(6): DIM n$(6,3)
155 FOR n=1 TO 6
157 LET n$(n)="???"
160 NEXT n
195 GO SUB 8000
199 REM ************
200 BRIGHT 0: BORDER 5: PAPER 7
```

Who wants to be a millionaire — you all do! Well, here's your chance. All you have to do is guide Max the Milliman among the giant tulips — picking up all the £1 and £5 notes you can find. To score points you must deposit your haul in your personal safe deposit box at the bank.

Unfortunately you keep misplacing the key to the vault and you must find it among the tulips before you can get to the bank. Also chasing the cash are two bomb dropping millipedes and a ravenous Pacman! To pick up your key or a bank-note you must position Max over it — the same applies when you want to deposit money at the bank. To move on to the next screen you must return home.

Each screen will only end when the Pacman character has reached a third of the way up the screen. The Pacman will also occasionally drop a ring — which is worth bonus points if Max collects it.

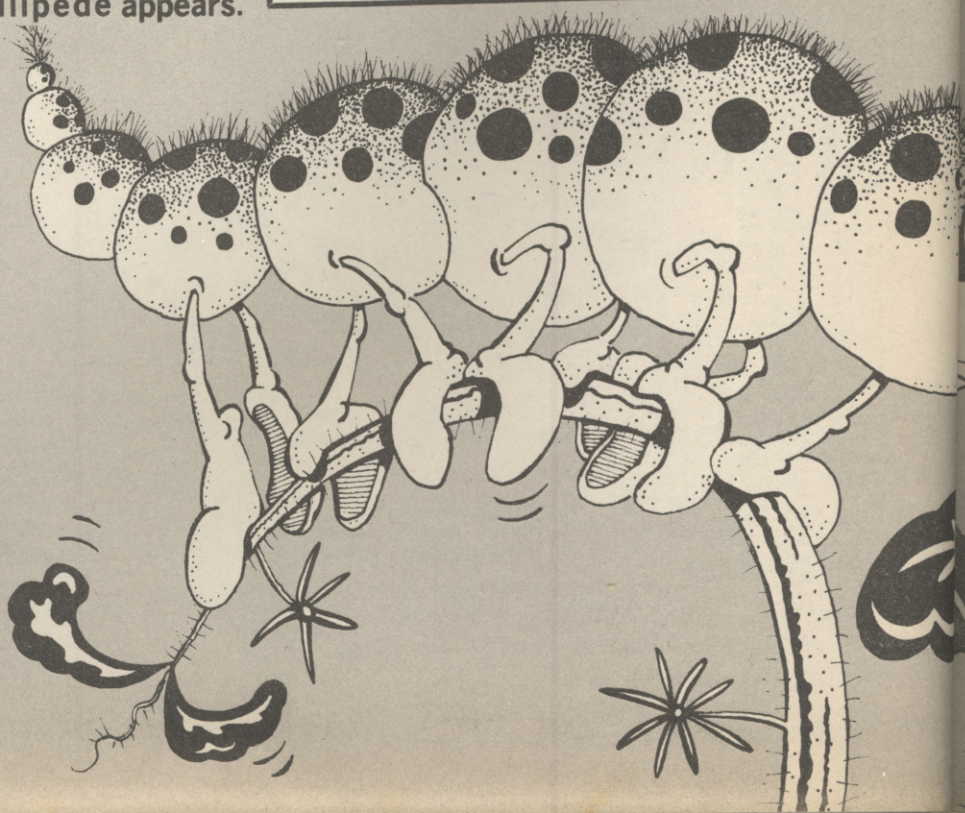
After the easy first screen a millipede will appear and drop bombs — beware of leaving Max on the line below the buildings as this is where the millipede appears.

If Max runs into a tulip, hits the Pacman or is hit by a bomb you'll lose a life. Each successive screen has more tulips to tiptoe through and two millipedes appear. Control keys are: 7=up, 6=down, 5=left, 8=right.

IMPORTANT NOTE: Please remember to add line 9077 LET ky=0. Lines 102 and 8335 may be omitted.

Loops:
n,m: general loop variables.
p: x-co-ordinate of Pacman.

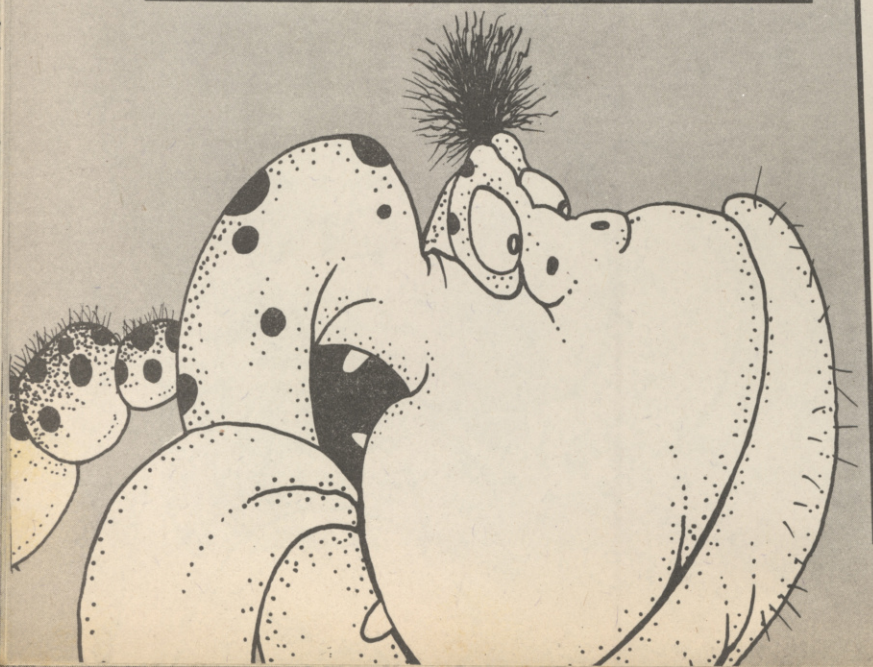
Flags:
Ky:key in possession (1)YES(o)NO
Rg:Ring dropped (1)YES(o)NO



```
  INK 0: CLS
 210 PRINT AT 0,0;"▄▄▄▄"
 220 PRINT AT 1,0; PAPER 0; INK
7;"BANK"
 230 PRINT AT 0,14;"▄▄▄▄"
 240 PRINT AT 1,14; PAPER 0; INK
 6;"SHOP"
 250 PRINT AT 0,28;"▄▄▄▄"
 260 PRINT AT 1,28; PAPER 0; INK
 5;"HOME"
 270 FOR n=2 TO 20
 280 LET r=INT (RND*32)
 290 IF ATTR (n,r)<>56 THEN GO T
O 280
 300 PRINT INK INT (RND*3+1);AT
n,r;"●"
 305 PRINT INK 4;AT n+1,r;"♣"
 310 NEXT n
 320 FOR n=2 TO 20 STEP 2
 330 LET r=INT (RND*31)
 340 IF ATTR (n,r)<>56 OR ATTR (
n,r+1)<>56 THEN GO TO 330
 350 IF RND>.9 THEN PRINT AT n,r
; PAPER 5; INK 0;"£5": GO TO 370
 360 PRINT AT n,r; INK 0; PAPER
4;"£1"
 370 NEXT n
 371 LET q=14+wv
 372 LET r=INT (RND*32)
 373 IF ATTR (q,r)<>56 THEN GO T
O 371
 374 PRINT AT q,r; PAPER 6; INK
0;"▬"
 375 IF wv=1 THEN GO TO 400
 380 FOR n=1 TO wv*2-2
 385 LET q=INT (RND*19+2)
 390 LET r=INT (RND*32)
 392 IF ATTR (q,r)<>56 OR ATTR (
q+1,r)<>56 THEN GO TO 385
 395 PRINT INK INT (RND*3+1);AT
q,r;"●"; INK 4;AT q+1,r;"♣"
 397 NEXT n
 399 REM ************
 400 FOR p=21 TO 2 STEP -1
 405 LET py=py+pa
 410 PRINT AT p,py;a$(pc)
 412 POKE 65037,0: LET l=USR 650
30
```

```
 420 GO SUB 1000
 425 IF p=x AND py=y THEN POKE 6
5037,2: LET l=USR 65030: LET l=U
SR 65030: GO TO 9500
 430 IF wl AND RND>.95 THEN GO T
O 3100
 450 IF (py=31 AND pa=1) OR (py=
0 AND pa=-1) THEN GO TO 3000
 460 PRINT AT p,py;" "
 465 IF NOT rg AND RND>.95 AND p
<12 THEN PRINT AT p,py; INK 2; p
APER 6;"&": LET rg=1
 470 GO TO 405
 999 REM ************
1045 LET c=1
1050 LET f=x: LET h=y
1100 IF INKEY$="7" AND x<>1 THEN
 LET x=x-1
1110 IF INKEY$="6" AND x<>21 THE
N LET x=x+1
1120 IF INKEY$="5" AND y<>0 THEN
 LET y=y-1: LET c=3
1130 IF INKEY$="8" AND y<>31 THE
N LET y=y+1: LET c=2
1140 IF ATTR (x,y)<>56 THEN GO T
O 4000
1200 PRINT AT f,h;" ";
1210 PRINT AT x,y;a$(c)
1300 RETURN
2999 REM ************
3000 PRINT AT p,py;" "
3005 LET pa=1-2*(pa=1)
3007 LET pc=4+(pc=4)
3008 LET py=-1+33*(py=31)
3010 NEXT p
3015 GO TO 9000
3099 REM ************
3100 FOR n=0 TO INT (RND*12)
3102 POKE 65037,0
3105 PRINT AT 2,n;"◐"
3110 LET l=USR 65030
3120 PRINT INK INT (RND*4);AT 2,
n;"●"
3130 NEXT n
3190 LET b=0
3240 PRINT AT 2,n;"◐"
3250 FOR m=3 TO 20
3260 PRINT AT m,n;"▌"
```

```
3270 POKE 65037,1: LET l=USR 650
30
3280 PRINT AT m,n;" ": NEXT m
3290 PRINT AT 20,n;"*"
3293 POKE 65037,5: LET l=USR 650
30
3300 PRINT AT 19,n-1;"\|/";AT 20
,n-1;"- -";AT 21,n-1;"/|\"
3305 POKE 65037,9: LET l=USR 650
30
3310 PRINT AT 19,n-1;"   ";AT 20
,n-1;"   ";AT 21,n-1;"   "
3315 IF ml=2 AND NOT b THEN GO T
O 3500
3330 PRINT AT 2,0;"
"
3331 IF SCREEN$ (x,y)=" " THEN G
O TO 9500
3340 GO TO 450
3500 FOR n=31 TO INT (RND*15+17)
 STEP -1
3505 PRINT AT 2,n;"●"
3510 POKE 65037,0: LET l=USR 650
30
3520 PRINT AT 2,n; INK INT (RND*
4);"●"
3530 NEXT n
3540 PRINT AT 2,n;"●"
3545 LET b=1
3550 GO TO 3200
3999 REM ************
4000 LET at=ATTR (x,y)
4010 IF at=32 THEN LET cr=cr+1:
GO TO 4100
4012 IF at=40 THEN LET cr=cr+5:
GO TO 4100
4014 IF at>56 AND at<61 THEN GO
TO 4200
4016 IF at=48 THEN LET ky=1: GO
TO 4400
4018 IF at=7 AND ky THEN GO TO 4
600
4020 IF at=6 AND cr>5 THEN LET c
r=cr-5: GO TO 4098
4022 IF at=5 AND p<15 THEN GO TO
 9000
4024 IF at=50 THEN LET cr=cr+20:
 PRINT AT x,y;"*";AT f,h;" ": PO
KE 65037,2: LET l=USR 65030: GO
TO 1230
4098 LET x=f: LET y=h
4099 GO TO 1200
4100 IF SCREEN$ (x,y)="£" THEN P
RINT AT x,y+1;" ": GO TO 1200
4120 PRINT AT x,y-1;" ": GO TO 1
200
4200 PRINT AT x,y;"*";AT f,h;" "
4210 POKE 65001,5: POKE 65005,2
4220 LET l=USR 65000
4230 POKE 65005,3: LET l=USR 650
00
```

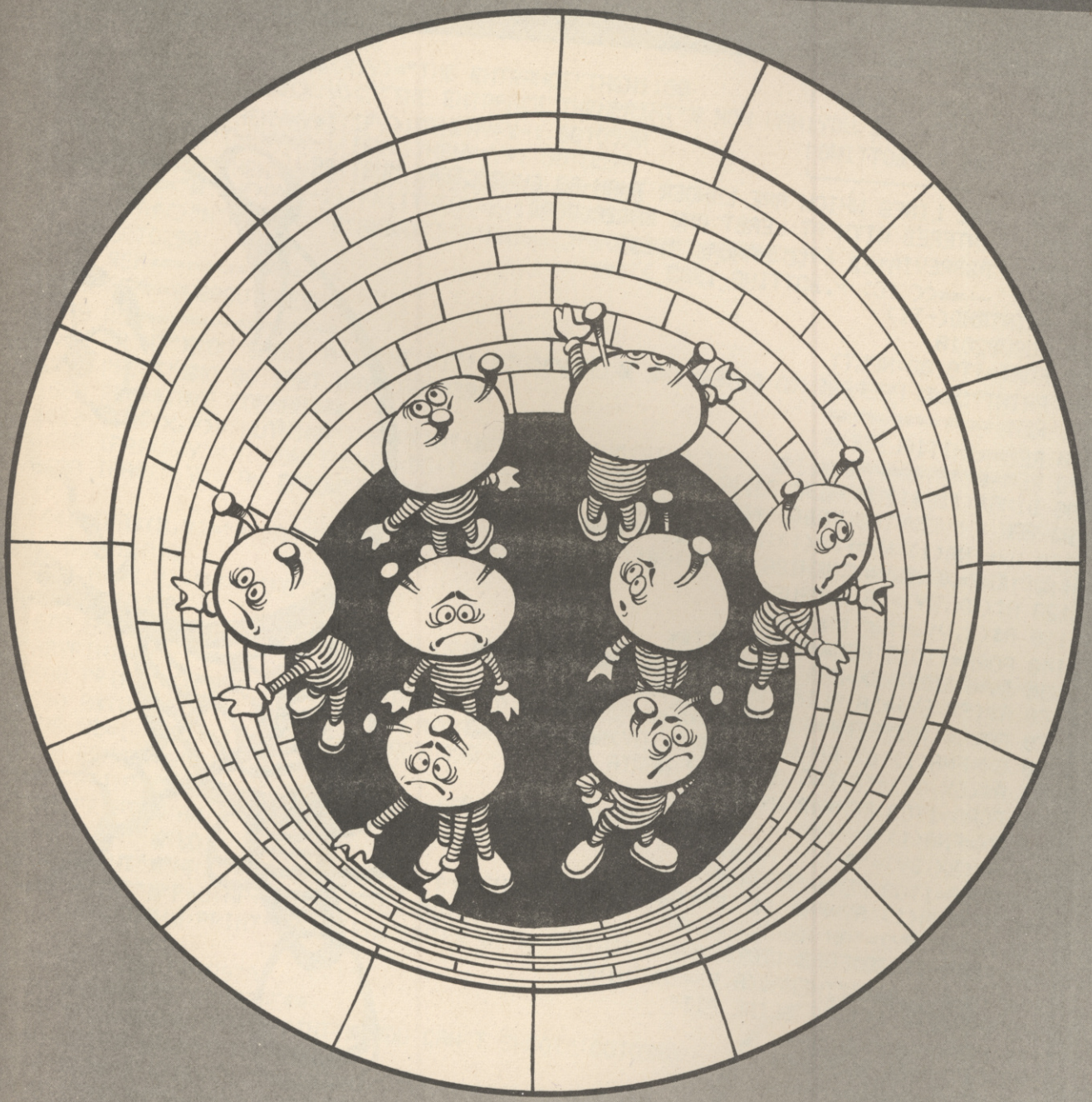


```
4240 FOR n=1 TO 100: NEXT n
4245 GO TO 9500
4400 PRINT AT x,y;"*";AT f,h;" "
4405 POKE 65001,5: POKE 65005,3
4410 LET l=USR 65000
4420 GO TO 1200
4600 LET bk=bk+cr
4605 LET sc=sc+10*cr
4610 LET cr=0: LET x=f: LET y=h
4620 POKE 65037,9: LET l=USR 650
30: GO TO 1200
7999 REM ************
8000 BORDER 0: PAPER 0: INK 6: B
RIGHT 1: CLS
8030 PRINT AT 1,13;"TODAYS";AT 3
,14;"BEST"
8040 FOR n=5 TO 15 STEP 2
8045 PRINT AT n,11; PAPER 4; INK
 0;"000000"
8050 PRINT AT n,17-LEN STR$ h((n
+1)/2-2); PAPER 4; INK 0;h((n+1)
/2-2)
8060 PRINT AT n,18; INK 0; PAPER
 4;n$((n+1)/2-2)
8070 NEXT n
8080 PRINT '''''"     PRESS ANY KEY
 TO START"
8090 PAUSE 1: PAUSE 0
8110 RETURN
8335 PRINT h(1);" ";sc
8999 REM ************
9000 CLS
9003 POKE 65037,0
9005 FOR n=1 TO 10
9006 LET l=USR 65030
9007 NEXT n
9010 PRINT AT 8,8;"WAVE ";wv;" C
OMPLETED"
9020 POKE 65037,4: LET l=USR 650
30
9030 LET sc=sc+50*wv
9040 LET wv=wv+1
9050 IF wv>6 THEN LET wv=6
9060 LET ml=ml+1
9070 IF ml>2 THEN LET ml=2
9075 LET rg=0: LET pc=4
9080 LET x=1: LET y=27: LET pa=1
: LET py=0: GO TO 200
9499 REM ************
9500 CLS
9501 LET li=li-1
9505 IF li=0 THEN GO TO 9550
9510 PRINT AT 8,8;"LIVES REMAINI
NG=";li
9520 POKE 65001,50: POKE 65005,1
: LET l=USR 65000
9525 LET pc=4: LET x=1: LET y=27
: LET PA=1: LET PY=0: LET cr=0:
LET ky=0: LET rg=0
9530 GO TO 200
9550 PRINT AT 8,11;"GAME  OVER"
9555 PAUSE 1: PAUSE 100
9560 IF sc>h(5) THEN GO TO 9600
9570 PRINT AT 12,4;"Press any ke
y to start"
9580 PAUSE 1: PAUSE 0: GO TO 100
9600 FOR n=5 TO 1 STEP -1
9610 IF sc<=h(n) THEN GO TO 9700
9620 NEXT n
9700 IF n+1=6 THEN LET h(6)=sc:
GO TO 9800
9710 FOR m=6 TO n+1 STEP -1
9715 IF M=1 THEN LET h(m)=sc:, GO
 TO 9800
9720 LET h(m)=h(m-1)
9730 LET n$(m)=n$(m-1)
9740 NEXT m
9750 LET h(n+1)=sc
9800 CLS
9810 PRINT AT 1,1;"WELL DONE! YO
U HAVE ONE OF THE";AT 3,1;"HIGH
SCORES. PLEASE ENTER YOUR";AT 5,
1;"INITIALS (3 CHARACTERS MAX.)"
9820 INPUT b$: IF LEN b$<3 THEN
GO TO 9820
9830 LET n$(n+1)=b$( TO 3)
9840 LET a=1: GO TO 110
```

GAME: WUMPUS HUNT

AUTHOR: PHILIP BOTTING

RUNS ON: A VIC 20 IN 16K



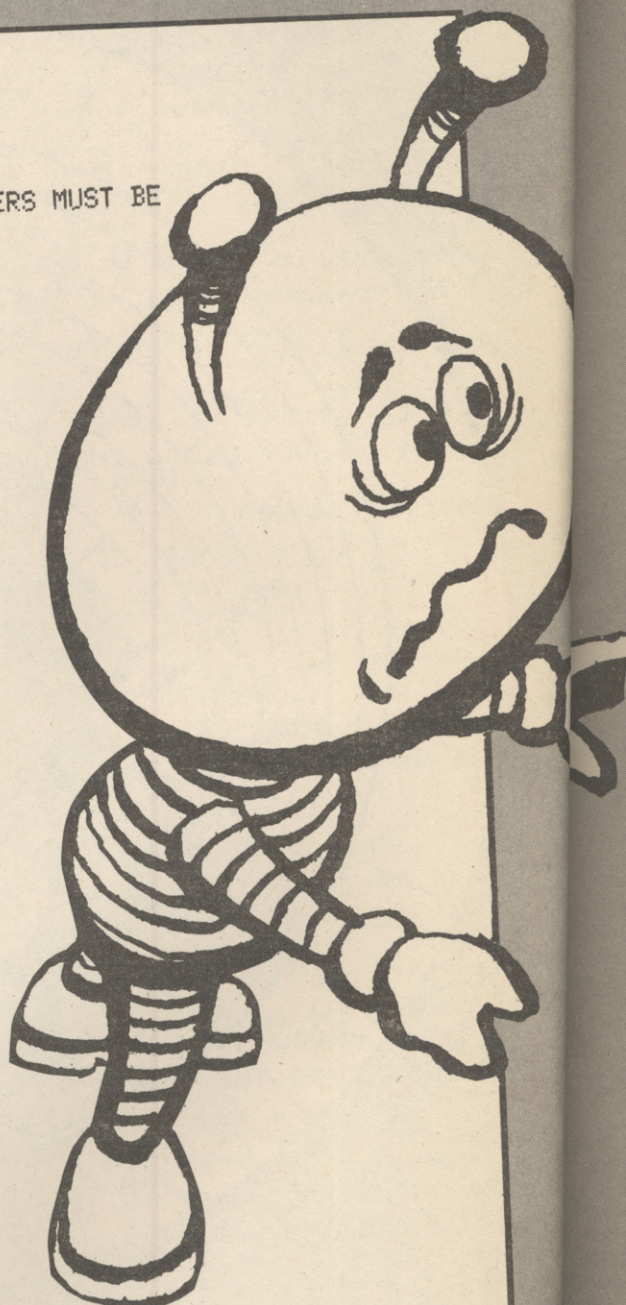
The Wumpus is a much sought after creature — even though it smells awful! You can sniff a Wumpus when it is in the next town! Perhaps because of its scent — but more probably because it is extremely shy — it tends to hide in out of the way places. The Wumpus you are attempting to track down has retreated into a disused labyrinth, once the home of some Greek monster — half man, half bull — you may have already heard about him. Anyway following an unfortunate encounter with a Greek Warrior, this monster is now deceased and the Wumpus has taken over.

Your task is to enter the labyrinth, kill the Wumpus and get out again! The labyrinth is a network of caves and corridors — and some of the caves have some surprises in store for the Wumpus hunter — but we'll leave those for you to discover. Full instructions are included in the listing. Good hunting!

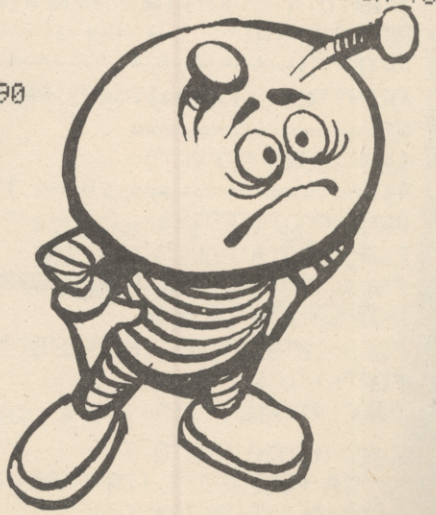
▷

CONTINUED

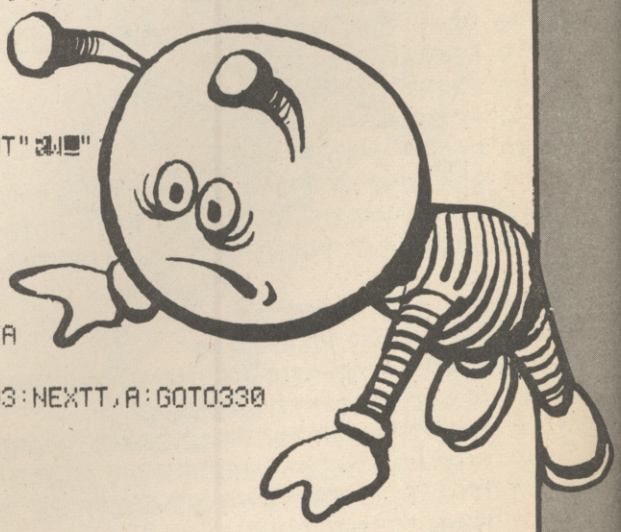
```
1 REM"   ┌──────────┐
2 REM"   | WUMPUS HUNT |
3 REM"   |          |
4 REM"   |BY P. BOTTING|
5 REM"   └──────────┘
6 REM    THE LINES WHICH ARE LONGER THAN 88 CHARACTERS MUST BE
7 REM    ENTERED WITH AT LEAST ONE BASIC WORD
8 REM    ABBREVIATED (VIC MANUAL P.133)
9 REM    --==<< (C) P.BOTTING 1983 >>==--
10 PRINTRND(-TI)
20 GOSUB2010
30 FORT=1TO100:NEXTT
40 PRINT"■■■■ PREPARE TO ENTER THE ■ LABYRINTH!!"
50 REM==============
60 REM==INITIALIZE==
70 REM==============
80 DIMA$(11,11):POKE36878,10:HP=2
90 DEF FNA(Z)=INT(RND(Z)*10+1)
100 WX=FNA(1):WY=FNA(1):X=FNA(1):Y=FNA(1)
110 IFWX=XANDWY=YTHEN100
120 A$(WX,WY)="A WUMPUS"
130 A$(X,Y)="THE ENTRANCE"
140 FORA=1TO10:REM**SLIME PIT**
150 SY=FNA(1):SX=FNA(1):IFA$(SX,SY)<>""THEN150
160 A$(SX,SY)="A SLIME PIT":NEXTA
170 FORA=1TO7:REM**GOLD**
180 GX=FNA(1):GY=FNA(1):IFA$(GX,GY)<>""THEN180
190 A$(GX,GY)="A BAG OF GOLD":NEXTA
200 FORA=1TO3:REM**BOWS**
210 BX=FNA(1):BY=FNA(1):IFA$(BX,BY)<>""THEN210
220 A$(BX,BY)="A BOW":NEXTA
230 FORA=1TO3:REM**ARROWS**
240 AX=FNA(1):AY=FNA(1):IFA$(AX,AY)<>""THEN240
250 A$(AX,AY)="AN ARROW":NEXTA
260 FORA=1TO10:FORB=1TO10
270 IFA$(A,B)=""THENA$(A,B)="NOTHING"
280 NEXTB,A:SP$="A SLIME PIT"
290 REM==============
300 REM=MAIN ROUTINE=
310 REM==============
320 GOSUB1400
330 POKE198,0:PRINT"■■THERE IS ";A$(X,Y):PRINT"■IN THIS ROOM."
340 IFA$(X,Y)=SP$THENGOSUB1490:PRINT"■YOU ARE ■DEAD■,THE SLIME■HAS KILLED YOU.":
GOTO970
350 IFA$(X,Y)="A WUMPUS"THENGOTO770
360 IFA$(X+1,Y)=SP$ORA$(X-1,Y)=SP$ORA$(X,Y+1)=SP$ORA$(X,Y-1)=SP$THENGOSUB580
370 IFX-WX>-3ANDX-WX<3ANDY-WY>-3ANDY-WY<3THENPRINT"■SMELL OF WUMPUS"
380 IFRND(1)<.05THENGOSUB1150
390 PRINT"■? ";
400 GETA$:IFA$=""THEN400
410 PRINTA$:P=P-5
420 IFA$="P"THEN610
430 IFA$="H"ANDHP>0THEN1220
440 IFA$="G"THEN720
450 IFA$="Q"THENGOTO980
```



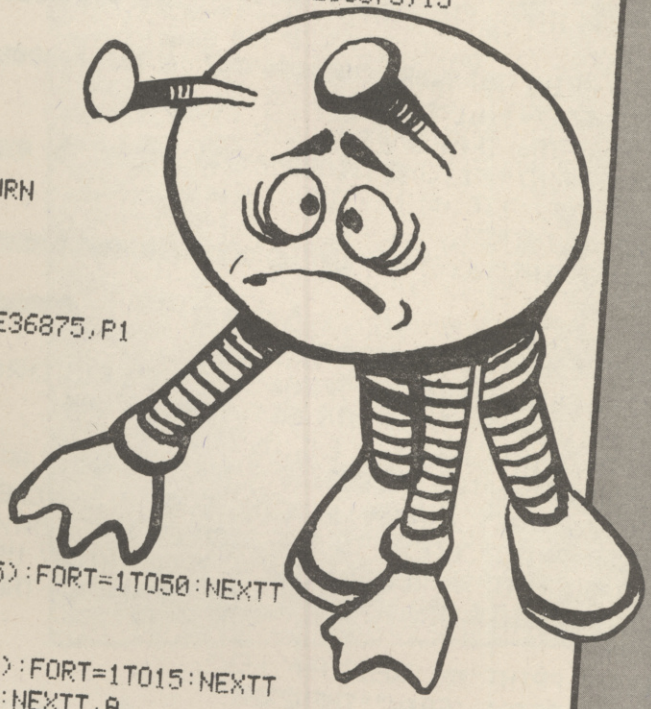
```
460 IFA$="F"THENGOSUB780
470 IFA$="O"THENIFA$(X,Y)="THE ENTRANCE"THEN1130
480 IFA$="O"ANDA$(X,Y)<>"THE ENTRANCE"THENPRINT"■ HOW CAN YOU DO THAT?":GOTO390
490 IFA$="N"THENY=Y+1:IFY>10THENY=Y-1:GOTO590
500 IFA$="S"THENY=Y-1:IFY<1THENY=Y+1:GOTO590
510 IFA$="E"THENX=X+1:IFX>10THENX=X-1:GOTO590
520 IFA$="W"THENX=X-1:IFX<1THENX=X+1:GOTO590
530 IFA$<>"N"ANDA$<>"E"ANDA$<>"W"ANDA$<>"S"ANDA$<>"O"THEN390
540 GOTO290
550 REM==============
560 REM==SUBROUTINES==
570 REM==============
580 PRINT"■YOU SMELL A SLIME PIT":RETURN
590 PRINT"■NO GO THAT WAY":GOTO390
600 REM**TAKE COMMAND**
610 IFA$(X,Y)="NOTHING"THENPRINT"■THERE IS NOTHING TO  . ■PICK UP":GOTO390
620 IFA$(X,Y)="A BOW"THENBO=BO+1:BP=BP+10:PRINT"■YOU PICKED UP THE BOW"
630 IFA$(X,Y)="AN ARROW"THENAR=AR+1:AP=AP+10:PRINT"■YOU PICKED UP THE     ■ARROW
"
640 IFA$(X,Y)="A BAG OF GOLD"THENG=G+INT(RND(1)*9+1)*10:PRINT"■YOU TOOK THE GOLD
":GOSUB1810
650 A$(X,Y)="NOTHING"
660 GOTO390
670 GOSUB1430:PRINT"■THE DEATH CRIES FROM  ■THE WUMPUS RING OUT   ■THROUGH THE L
ABYRINTH "
680 PRINT"YOU ARE A HERO.";:GOSUB1710:PRINT"BUT CAN■YOU GET OUT?!!??!"
690 A$(WX,WY)="A WUMPUS     ■CARCASS":P=P+100
700 WD=1:FORT=1TO1000:NEXTT:GOTO390
710 REM**INVENTORY**
720 PRINT"■YOU HAVE:■":PRINTG;" GOLD PIECES
730 PRINT"■"AR;" ARROW(S)"
740 PRINT"■"BO;" BOW(S)"
750 PRINT"■"HP;"HELP CALL(S) LEFT"
760 PRINT"■"P+G+AP+BP;"POINTS":GOTO390
770 GOSUB1840:PRINT"■YOUR ENCOUNTER WITH   ■THIS WUMPUS DID NOT GO■WELL FOR YOU.
"
775 P=P-100:GOTO970
780 REM**FIRE ROUTINE**
790 IFBO=0ORAR=0THENPRINT"■ YOU CAN'T SHOOT":GOTO390
800 GETA$:IFA$=""THEN800
810 IFA$<>"N"ANDA$<>"E"ANDA$<>"W"ANDA$<>"S"THEN800
820 IFA$="N"THENFY=Y+1:FX=X
830 IFA$="S"THENFY=Y-1:FX=X
840 IFA$="E"THENFY=Y:FX=X+1
850 IFA$="W"THENFY=Y:FX=X-1
860 PRINT"■■THE ARROW IS LOOSED   ■FROM YOUR BOW ";
870 IFA$="N"THENPRINT"TO THE  ■NORTH"
880 IFA$="S"THENPRINT"TOWARDS ■THE SOUTH"
890 IFA$="E"THENPRINT"TO THE  ■EAST"
900 IFA$="W"THENPRINT"TOWARDS ■THE WEST"
910 GOSUB1580:AR=AR-1
920 IFA$(FX,FY)="A WUMPUS"THEN670
930 IFFX>10ORFX<1ORFY>19ORFY<1THENPRINT"■IT HIT THE WALL AND   ■BROKE":GOTO390
940 IFA$(FX,FY)="NOTHING"ANDRND(1)<.5THENA$(FX,FY)="AN ARROW"
950 PRINT"■ NOTHING HAPPENED"
```



```
960 GOTO390
970 FORT=1TO2000:NEXTT
980 PRINT"■■ YOU HAD:"
990 PRINT"■"G;"GOLD PIECES"
1000 PRINT"■"AR;"ARROW(S)"
1010 PRINT"■"BO;"BOW(S)"
1020 PRINT"■"HP;"HELP CALL(S) LEFT"
1030 PRINT"■"P+G+AP+BP;"POINTS"
1040 PRINT"■ WOULD YOU LIKE TO TRY■ TO HUNT THE WUMPUS   ■ AGAIN?";
1050 GETA$:IFA$<>"Y"ANDA$<>"N"THEN1050
1060 IFA$="Y"THENPRINT" ■YES■":POKE36875,230
1070 IFA$="N"THENPRINT" ■NO■":POKE36875,150
1080 FORT=1TO500:NEXTT
1090 POKE36875,0:FORT=1TO400:NEXTT
1100 IFA$="Y"THENPRINT"■":RUN
1110 PRINT"■■ TRY AGAIN SOMETIME,  ■ GOODBYE."
1120 FORT=1TO1500:NEXTT:PRINT"■":END
1130 IFWD=0THENPRINT"■■ CHICKEN!":GOSUB1650:GOTO390
1140 PRINT"■■■YOU ARE A (LIVE) HERO!":P=P+200:GOTO970
1150 PRINT"■FLAPPING NOISES":GOSUB1940
1160 PRINT"■■OH NO!!";:GOSUB1980:PRINT" A SUPER BAT":GOSUB1980
1170 PRINT"■IT HAS PICKED YOU UP!":GOSUB1940:GOSUB1940
1180 PRINT"■AT LAST IT HAS DROPPED■YOU!":GOSUB2000
1190 Y=FNA(1):X=FNA(1):IFA$(X,Y)=SP$THENPRINT"■INTO A SLIME PIT!!":GOSUB1500:GOT
0970
1200 FORT=1TO1000:NEXTT:GOTO330
1210 REM**HELP CALL**
1220 HP=HP-1:P=P-100:PRINT"■>>>THE LABYRINTH<<<<<┌──────────────┐"
1230 FORA=10TO1STEP-1
1240 FORQ=1TO10:PRINT"│";
1250 IFA$(Q,A)=SP$THENPRINT"●";
1260 IFA$(Q,A)="A WUMPUS"THENPRINT"W";
1270 IFA$(Q,A)="A WUMPUS     ■CARCASS"THENPRINT"■W■"
1280 IFA$(Q,A)="THE ENTRANCE"THENPRINT"E";
1290 IFA$(Q,A)="A BOW"THENPRINT"B";
1300 IFA$(Q,A)="AN ARROW"THENPRINT"A";
1310 IFA$(Q,A)="A BAG OF GOLD"THENPRINT"G";
1320 IFA$(Q,A)="NOTHING"THENPRINT" ";
1330 NEXTQ:PRINT"│ ├─┼─┼─┼─┼─┼─┼─┼─┼─┤":NEXTA
1340 PRINT"└─┴─┴─┴─┴─┴─┴─┴─┴─┘";
1350 PRINT"■■";:FORA=1TO483:PRINT" ";:FORT=1TO3:NEXTT,A:GOTO330
1360 REM==============
1370 REM=SOUND EFFECTS=
1380 REM==============
1390 REM**FOOTSTEPS**
1400 FORL=1TO10:POKE36877,200
1410 FORM=1TO10:NEXTM:POKE36877,0:FORM=1TO100:NEXTM,L:RETURN
1420 REM**DEATH CRIES*
1430 FORA=10TO1STEP-1:POKE36878,A+INT(RND(1)*3-1)
1440 FORT=1TO10
1450 POKEINT(RND(1)*3+36874),INT(RND(1)*30)+128
1460 FORQ=1TO20:NEXTQ,T
1470 NEXTA:POKE36877,128:FORA=36874TO36877:POKEA,0:NEXT:RETURN
1480 REM**SLIME PIT**
1490 FORA=230TO150STEP-1:POKE36875,A:FORT=1TO5:NEXTT,A
1500 POKE36875,0:FORT=1TO100:NEXTT
```



```
1510 FORA=190TO250STEP2:POKE36877,A:NEXTA:POKE36877,0:FORT=1TO500:NEXTT
1520 FORA=1TO10
1530 Q=50-A*5:POKE36878,15-A
1540 POKE36875,Q+130:FORT=1TO20-Q:NEXTT
1550 FORQW=QTOQ+20STEP5:POKE36875,QW+130
1560 FORT=1TO10:NEXTT,QW:POKE36875,0:FORT=1TO300:NEXTT,A:POKE36875,0:POKE36878,1
5:RETURN
1570 REM** ARROW **
1580 FORA=1TO3
1590 FORQ=130+A*2TO130+A*4:POKE36875,Q:NEXTQ,A:POKE36878,7
1600 FORA=1TO4
1610 FORQ=130TO140STEP5:POKE36875,Q:NEXTQ
1620 FORQ=140TO130STEP-5:POKE36875,Q:NEXTQ,A:POKE36875,0:POKE36878,15
1630 FORT=1TO500:NEXTT:RETURN
1640 REM **CHICKEN**
1650 FORA=1TO3
1660 POKE36875,240:FORT=1TO100:NEXTT
1670 POKE36875,0:FORT=1TO50:NEXTT
1680 POKE36875,200:FORT=1TO100:NEXTT
1690 POKE36875,0:FORT=1TO200:NEXTT,A:RETURN
1700 REM**HERO TUNE**
1710 READP:IFP=-1THENRETURN
1720 READP1,T:FORQ=1TOT
1730 POKE36875,P:POKE36878,15-(8/T)*N:POKE36875,P1
1740 NEXTQ:POKE36875,0
1750 FORT=1TO20:NEXTT:GOTO1710
1760 REM >> TUNE DATA <<
1770 DATA173,174,15,181,182,15,203,203,10
1780 DATA216,216,6,200,200,20,192,195,15
1790 DATA181,182,17,173,173,20,-1
1800 REM**GOLD**
1810 FORA=1TO20:POKE36876,INT(RND(1)*10+235):FORT=1TO50:NEXTT
1820 POKE36876,0:FORT=1TO20:NEXTT,A:RETURN
1830 REM**MEET THE WUMPUS**
1840 FORA=1TO20:POKE36877,INT(RND(1)*30+150):FORT=1TO15:NEXTT
1850 POKE36877,0:FORT=1TO(INT(RND(1)*20))12:NEXTT,A
1860 FORA=1TO5
1870 FORQ=1TO10
1880 POKE36877,Q*4+190:POKE36877,128:NEXTQ:POKE36877,0
1890 FORT=1TO100+INT(RND(1)*300):NEXTT,A
1900 POKE36875,234:FORT=1TO200:NEXTT:POKE36875,0
1910 FORT=1TO100:NEXTT:POKE36875,227:FORT=1TO200:NEXTT:POKE36875,0
1920 FORT=1TO100:NEXTT:POKE36875,224:FORT=1TO500:NEXTT:POKE36875,0:RETURN
1930 REM**SUPER BAT 1**
1940 FORA=1TO5:FORQ=10TO1:POKE36878,15-Q:POKE36875,160-A:POKE36877,220-A:FORT=1T
0100
1950 NEXTT,Q:POKE36875,0:POKE36877,0
1960 FORT=1TO300:NEXTT,A:RETURN
1970 REM**EXCLAMATION**
1980 FORA=150TO210:POKE36875,A:NEXTA:POKE36875,0:RETURN
1990 REM**SUPER BAT 2**
2000 FORA=230TO150STEP-1:POKE36875,A:FORT=1TO5:NEXTT,A:POKE36875,0:RETURN
2010 REM==============
2020 REM=TITLE SEQUENCE=
2030 REM==============
```



```
2040 PRINT"■■ ┌──────┐                    !JOIN THE└──────┐●  !!  !!  !!  !┌─┐ !└─┐  !"
2050 PRINT" !┬ ┬┬ ┬┌─┐┌─┐┬ ┬┌─┐!  !!  !!  !!+!!  !!  !!  +!  !!  !!  !!  !├─┘ !└─┐  !"
;
2060 PRINT"!┬!!  !!  !!  !  !┬ !!  !└─┘└─┘ !!  └─┘└─┘!"
2070 PRINT" └─┐                ┌─┘"
2080 PRINT"    !┬ ┬┬ ┬┌─┐┌─┐!          !!  !!  !!  !  !  !                !├─┤ !!  !  !┌─┘       "
;
2090 PRINT"  !!  !!  !!  !  !!              !┴ ┴└─┘ ┴ ┴!"                    └──────┐ ┌──────┘"
2100 PRINT"    !                !                !IF YOU DARE!
2110 PRINT"   ■■▼■    ┌─┘└─┘!■                  ■ ▚■●▛ ■■┌──┘■"
2120 PRINT" ■                ■                ■      ■                    ■       ■"
2130 PRINT"  ▚■  ■▛    ■HIT A KEY■       AA";
2140 GETA$:IFA$<>""THEN2205
2150 PRINT"              ┌┐┐┐┐┐┐■▼■▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒■▼'▛■▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒■
  ■"
2160 PRINT"■▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▛■  ■▛▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒! AA ";
2170 FORT=1TO100:NEXTT
2180 GETA$:IFA$<>""THEN2205
2190 PRINT"┌┐■■■■■! !■! ■■■■■
```

GAME: PSYCHO CIRCUIT

AUTHOR: SIMON CARLSON

RUNS ON: AN ATARI 400/800 IN 5K WITH JOYSTICK

Rev up your Atari for an attack on the world speed record on a dangerous race track! The track is strewn with rocks and you must race along dodging them as you go. Your aim is to get as far as you can without crashing — it's as simple as that!

After the first 100 miles more rocks appear on the track to make driving even more dangerous. But don't drive your car off the track — that means certain death too!

Remember to plug your joystick into port 1 on your Atari, and after each game make sure you press the System Reset key and type RUN — otherwise the program will not work properly.

Program notes:

Lines 1-190 draw the car (player/missile) and colour it. 200-306 redefine the character set. 309-380 draw landscape and road, put rocks on road in random positions and scrolls road. 390-500 check joystick and move car and also check to see if a car has hit a rock. Add mileage and increase difficulty. 505-550 change colour for crash and sound for crash. Gives final mileage 360 scrolls down screen.

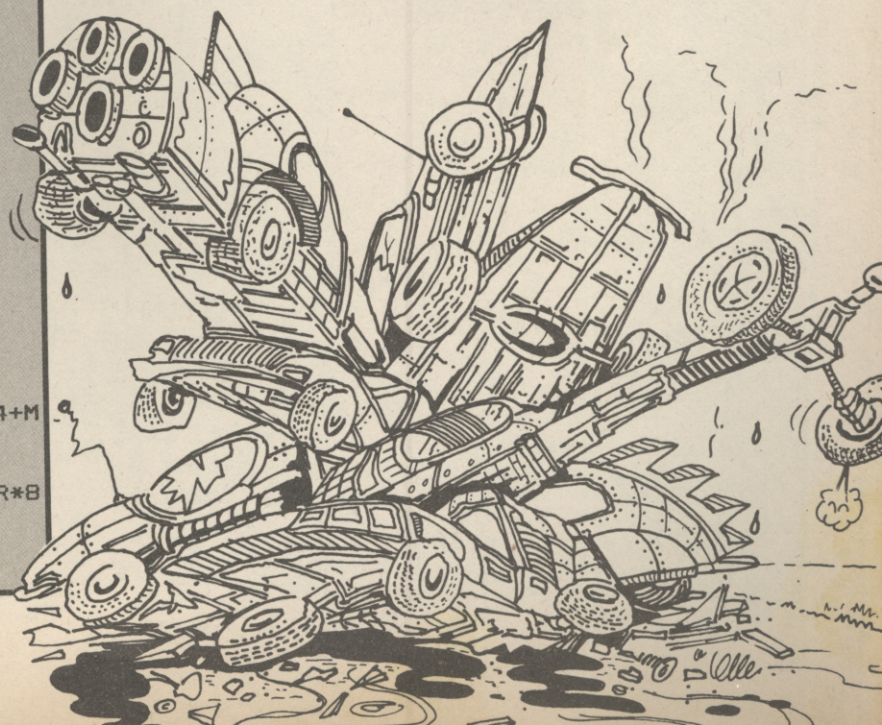
Variables:

A$-road and rocks. a- end of road. E-rock. d-bushes. c-house.

The game can be made easier by deleting the E's in A$ (lines 330-341) or making the value of G bigger in line 309.

```
1 DIM A$(9):PMB=54279
2 RAM=106
3 SDM=559
4 GRA=53277
5 HPO=53248
6 PCO=704
8 SC=0:PO=0
10 GRAPHICS 17:POKE 87,0:POKE 82,0:X=120
20 X=100
30 Y=90
40 A=PEEK(RAM)-8
50 POKE PMB,A
60 MYPMB=256*A
70 POKE SDM,46
80 POKE GRA,3
90 POKE HPO,100
100 FOR I=MYPMB+512 TO MYPMB+640
110 POKE I,0
120 NEXT I
130 FOR I=MYPMB+512+Y TO MYPMB+519+Y
140 READ A
150 POKE I,A
160 NEXT I
170 DATA 219,219,60,60,60,60,219,219
180 POKE PCO,90
200 POKE 106,PEEK(106)-8
220 P=PEEK(106):N=P*256
230 FOR M=0 TO 300:POKE N+M,PEEK(57344+M
):NEXT M
240 FOR CHAR=33 TO 38
250 FOR M=0 TO 7:READ D:POKE N+M+(CHAR*8
),D:NEXT M
260 NEXT CHAR
270 POKE 756,P
```

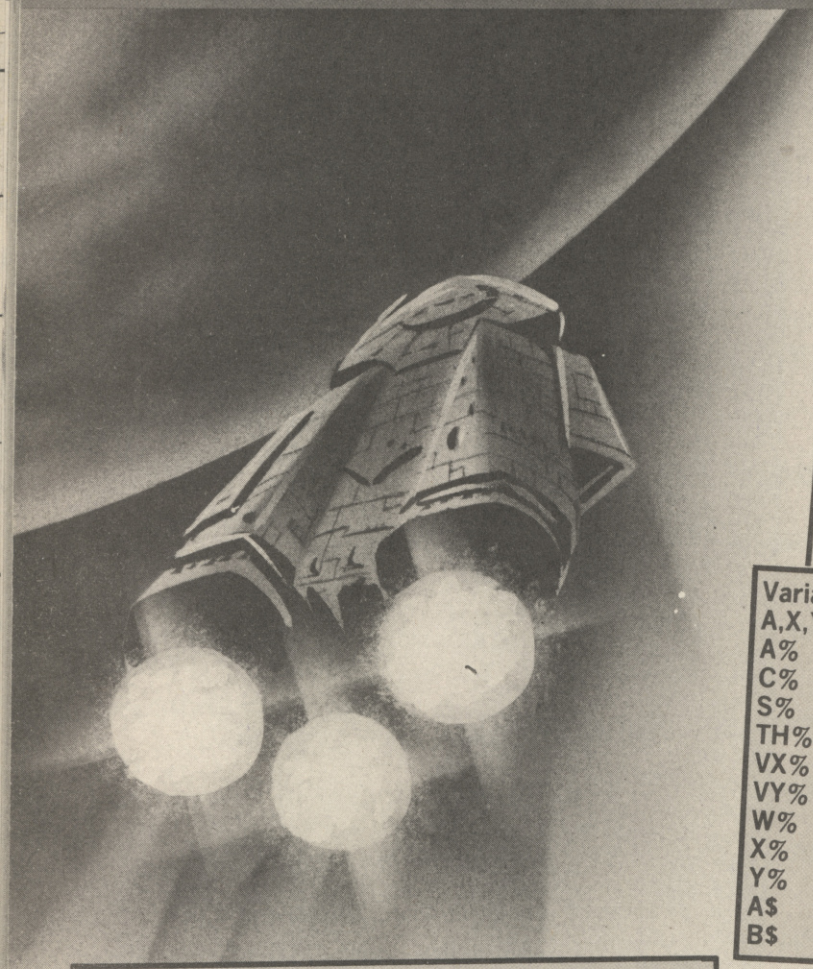
```
280 SOUND 0,55,6,10
300 DATA 224,224,224,224,224,224,224,224
,192,192,192,192,192,192,192,192,56,124,
254,100,100,124,124,124
305 DATA 0,0,0,0,66,165,24,24,48,124,124
,60,60,254,254,12
306 DATA 128,0,0,0,0,0,0,0
309 G=INT(RND(0)*10)
310 A$="a      a"
320 A$="a      a"
330 IF G=1 THEN A$="a E    a"
340 IF G=2 THEN A$="a    E a"
341 IF G=3 THEN A$="aE    Ea"
351 IF PO>=100 THEN GOSUB 601
360 POSITION 5,0:? #6;A$;:? CHR$(157);
370 POSITION RND(0)*19,0:? #6;"d"
380 IF PEEK(53770)>200 THEN POSITION RND
(0)*19,0:? #6;"C";
390 ST=STICK(0):IF ST=7 AND X<125 THEN X
=X+4
400 IF ST=11 AND X>92 THEN X=X-4
410 POKE 53248,X
430 IF PEEK(53252)=1 THEN GOSUB 505
440 SC=SC+0.5
445 PO=PO+1
500 IF SC>=50 THEN G=INT(RND(0)*6):GOTO
310
501 GOTO 309
505 FOR I=1 TO 250
506 SETCOLOR 4,I,8:SOUND 0,20,8,15
511 NEXT I
512 SOUND 0,0,0,0
515 GRAPHICS 1
518 POKE 53277,0
520 ? #6;"YoU cRaShED yOuR cAr"
521 POSITION 5,3:? #6;"MiLeS=";SC
525 POSITION 2,5:? #6;"HiT sYsTeM rEsET"
530 POSITION 3,6:? #6;"aNd RuN tO pLay"
550 RESTORE :GOTO 550
601 SOUND 0,50,6,10:PO=0:RETURN
```



GAME: SHUTTLE

AUTHOR: JONATHON TAYLOR

RUNS ON: A BBC B WITH JOYSTICK



You are the pilot of a space-shuttle carrying vital supplies to an exploration team on a barren planet. The object of the game is to fly the shuttle to the mothership and back in the minimum possible time. To dock with the mothership, the shuttle must be flown carefully to the top of the docking bay. The mothership's automatic systems then take over and the cargo is loaded. On the return journey, the shuttle is heavily laden and more difficult to control. The skill level determines the strength of gravity and the size of the docking bay. Landing and docking must be carried out carefully. Your shuttle must not touch any other part of the mothership apart from the docking bay. To do so means loss of life and no claims bonus!

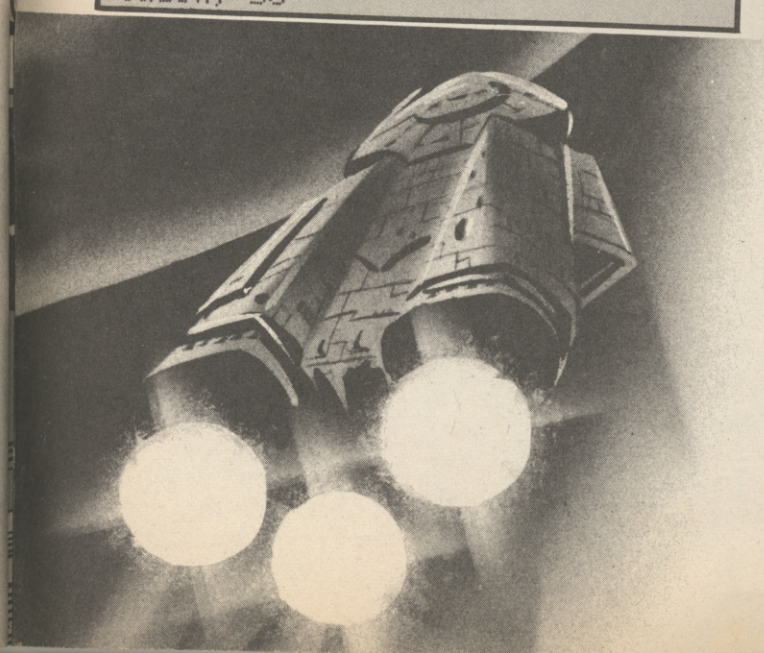
Variables	
A,X,Y	General purpose
A%	Input routine & screen set-up
C%	Crash flag
S%	Skill level
TH%	Engine thrust
VX%	Horizontal velocity of shuttle
VY%	Vertical velocity of shuttle
W%	Width of docking bay
X%	Horizontal position of shuttle
Y%	Vertical position of shuttle
A$	Shuttle
B$	Crashed shuttle

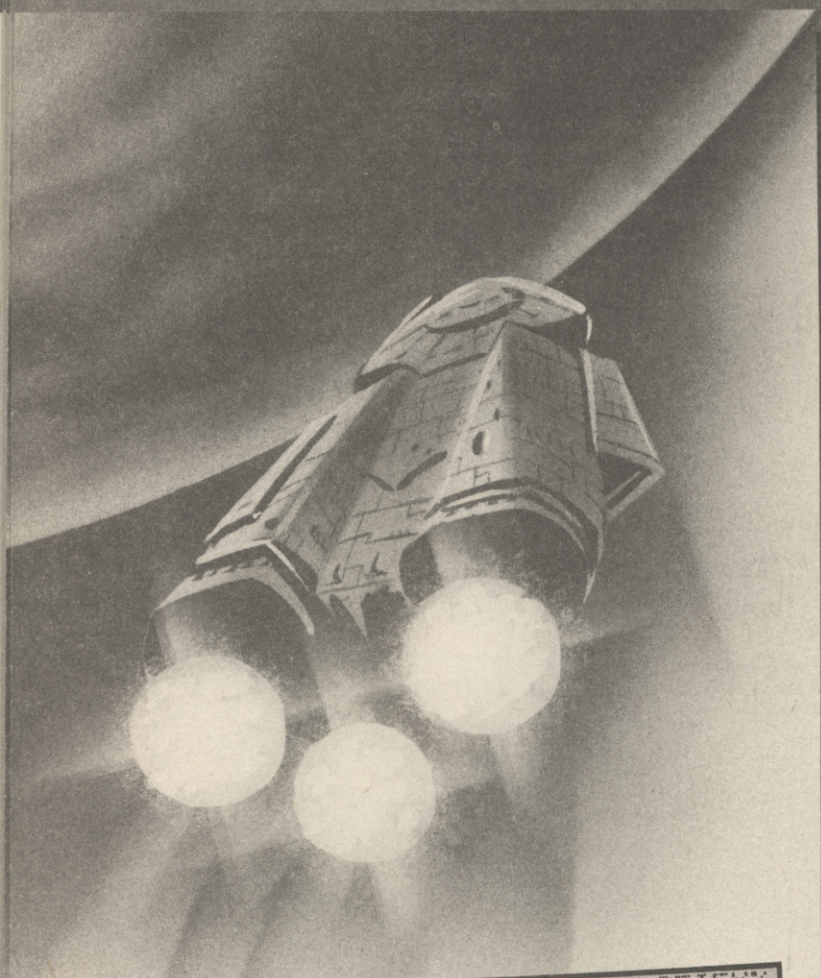
```
   60MODE7
   70PROCinst
   80MODE1
   90PROCinit
  100PROCtakeoff
  110PROCfly
  120IFC%=0 THEN PROCload ELSE P
ROCopt:GOTO80
  130PROCland
  140IFC%=1 THEN PROCopt:GOTO80
  150VDU4:PRINTTAB(13,10)"TIME "
;TIME/100;" SEC":FORX=0TO2000:NE
XT
  160PROCopt:GOTO80
  170DEFPROCinit
  180VDU23,224,60,90,153,255,126
,36,66,129,23,225,32,34,21,60,12
7,90,234,60,23,226,28,28,28,28,1
27,62,28,8
  190FORA%=1TO200:PLOT69,RND(128
0),RND(800)+100:NEXT:FORA%=1TO20
:PLOT69,RND(800),RND(90)+900:NEX
T
  200GCOL0,2:MOVE300,750:FORX=0T
U2*PI+.2STEP.2:MUVE300,750:PLOT8
5,300+100*COS(X),750+100*SIN(X):
NEXT
  210MOVE650,310:FORX=0TO2*PI+.2
STEP.2:MOVE650,300:PLOT85,650+5
0*COS(X),300+50*SIN(X):NEXT
  220GCOL0,1:MOVE-100,40:MOVE800
,40:PLOT85,300,400:MOVE400,40:MO
VE1000,40:PLOT85,700,350:MOVE700
,40:MOVE1500,40:PLOT85,950,200:G
COL0,3
  230MOVE450,1024:DRAW500,990:DR
AW736,990:MOVE740,1024:DRAW740,9
80:DRAW850,950:DRAW850,900:DRAW9
00,900:DRAW900,994:DRAW930+W%,99
4:DRAW930+W%,900:DRAW1280,900:MO
VE770,970:DRAW750,950:MOVE820,96
0:DRAW770,910
  240FORX=1030 TO 1200 STEP 50:M
OVEX,950:DRAWX+20,950:DRAWX+20,9
60:DRAWX,960:DRAWX,950:NEXT:FORX
=550 TO 700 STEP 50:MOVEX,1000:D
RAWX+20,1000:DRAWX+20,1010:DRAWX
,1010:DRAWX,1000:NEXT
  250MOVE500,40:DRAW500,68:DRAW6
```

```
50,68:DRAW650,40:MOVE0,40:DRAW12
80,40
  260FORX=0TO400STEP100:MOVEX,40
:DRAWX+RND(50),65:DRAWX+100,40:N
EXT:FORX=650TO1280STEP100:MOVEX,
40:DRAWX+RND(50),65:DRAWX+100,40
:NEXT:VDU5:MOVE900+W%/2,1030:VDU
226
  270X%=560:Y%=100:VX%=0:VY%=0:G
%=7+S%/2:TH%=25:C%=0:A$=CHR$224:
W$=CHR$225
  280GCOL4,1
  290ENDPROC
  300DEFPROCinst
  310CLS:PRINT:PRINT
  320FORA=1TO2:PRINTTAB(9)CHR$13
2CHR$157CHR$135CHR$141"SHUTTLE
 "CHR$156:NEXT
  330PRINT:PRINTCHR$130" The peo
ple of your planet are"
  340PRINTCHR$130"starving to de
ath."
  350PRINT:PRINT" A galactic fre
ighter has arrived"
  360PRINT" with food but it can
not land and"
  370PRINT" will have to leave a
gain very shortly"
  380PRINT" you must fly to the
freighter as fast"
  390PRINT" as possible to colle
ct the food."
  400PRINT:PRINT" Fly your shutt
le into the docking"
  410PRINT" bay of the freighter
 using the"
  420PRINT" joystick. On the ret
urn journey"
  430PRINT" you will be heavily
laden, so"
```

Procedures	
PROCinst	Instructions
PROCinit	Initialises variables & sets up screen
PROCtakeoff	Waits until engines are fired & resets timer
PROCfly	Checks position of shuttle on flight to freighter
PROCload	Closes/opens docking bay door & loads cargo
PROCopt	Waits until joystick button is pressed
PROCland	Checks position of shuttle on flight
PROCinput	Gets data from analogue port
PROCdraw	Updates shuttle position on screen
PROCcrash	Shuttle crash
PROCfall	Shuttle fall
PROCsound1	Engine sound
PROCsound2	Docking
PROCsound3	Docking proximity warning

```
  440PRINT" be carefull. Use the
 joystick"
  450PRINT" button to fire your
engines."
  460FORY=1TO15:FORX=8 TO 19:PRI
NTTAB(0,X)CHR$(RND(7)+128);:NEXT
:NEXT
  470FORX=8 TO 19:PRINTTAB(0,X)C
HR$(135);:NEXT
  480PRINT
  490INPUTTAB(2,22)" LEVEL OF SK
ILL (1-9) ",S%:IF S%<1 OR S%>9 T
HEN VDU7:PRINTTAB(25,22)"
":GOTO490
  500W%=(10-S%)*6+16
  510ENDPROC
  520DEFPROCtakeoff
  530Y%=100:VX%=0:VY%=0:MOVEX%,Y
%:PRINTA$
  540REPEAT UNTIL ADVAL(0):TIME=
  550PROCsound1:FORX=0TO300:NEXT
:PROCsound2
  560ENDPROC
  570DEFPROCsound1
  580SOUND16,-9,4,5
  590ENDPROC
  600DEFPROCsound2
  610SOUND1,-12,180,2:SOUND1,-12
,210,1
  620ENDPROC
  630DEFPROCsound3
  640SOUND18,-8,220,1:SOUND19,-8
,250,1
  650ENDPROC
  660DEFPROCdraw(VX%,VY%)
  670MOVE X%,Y%:X%=X%+VX%:Y%=Y%+
VY%:PRINTA$:MOVE X%,Y%:PRINTA$
```





```
  680IFX%>1280THENX%=-32ELSEIFX%
<-32THENX%=1280
  690ENDPROC
  700DEFPROCfly
  710REPEAT
  720PROCinput
  730PROCdraw(VX%DIV50,VY%DIV50)
  740IFY%<100 AND VY%>-150 AND X
%>500 AND X%<618 THEN PROCsound2
:MOVEX%,Y%:PRINTA$:PROCtakeoff
ELSE IFY%<100 PROCcrash(A$)
  750 UNTIL Y%>900 OR C%=1
  760IFC%=1THEN ENDPROC
  770IFX%<700 THEN 710 ELSE IF X
%>900 AND X%<900+W% THEN PROCsou
nd3:ELSE PROCcrash(A$):PROCfall:
PROCcrash(W$):ENDPROC
  780IF Y%<990 THEN 710
  790IF VY%>150 THEN PROCcrash(A
$):PROCfall:PROCcrash(W$):ELSE P
ROCsound2:VY%=0
  800ENDPROC
  810DEFPROCcrash(A$)
  820MOVEX%,Y%:PRINTA$:FORX=-15T
00STEP.5:SOUND0,X,6,1:NEXT
  830MOVEX%,Y%:PRINTW$:C%=1
  840ENDPROC
  850DEFPROCfall
  860VY%=0:REPEAT:VY%=VY%-G%:MOV
EX%,Y%:Y%=Y%+VY%/50:PRINTW$:MOVE
X%,Y%:PRINTW$:FORX=0TO5:NEXT:UNT
IL Y%<100
  870ENDPROC
  880DEFPROCload
  890SOUND1,-7,0,31:SOUND2,-7,1,
31
  900FORX=904TO926+W%STEP4:MOVEX
,920:DRAWX,930:FORY=0TO100:NEXT:
NEXT
  910MOVE904,970:DRAWX%-4,970:SO
UND1,-7,170,1
  920MOVE400,512:PRINT"CARGO LOA
DING":FORX=0TO30:SOUND1,-5,100,1
:SOUND1,-5,110,1:NEXT:MOVE400,51
2:PRINT"CARGO LOADING"
  930MOVE904,970:DRAWX%-4,970:SO
UND1,-7,170,1:G%=16+S%*.7
  940SOUND1,-7,0,31:SOUND2,-7,1,
31
  950FORX=926+W%TO904STEP-4:MOVE
X,920:DRAWX,930:FORY=0TO100:NEXT
:NEXT
  960PROCsound2
  970ENDPROC
  980DEFPROCland
  990VX%=0:VY%=0:Y%=990
 1000REPEAT
 1010PROCinput
 1020PROCdraw(VX%DIV50,VY%DIV50)
 1030IFY%>900 AND X%>750 AND (X%
<908 OR X%>900+W% OR Y%>990) THE
N PROCcrash(A$):PROCfall:MOVEX%,
Y%:PRINTA$
 1040UNTILY%<100
 1050IF VY%<-150 OR X%<500 OR X%
>618 THEN PROCcrash(A$):ENDPROC
 1060PROCsound2:MOVEX%,Y%:PRINTA
$:Y%=100:VX%=0:VY%=0:MOVEX%,Y%:P
RINTA$
 1070ENDPROC
 1080DEFPROCopt
 1090VDU4:PRINTTAB(5,15)"PRESS '
THRUST' FOR ANOTHER GAME":REPEAT
 UNTIL ADVAL(0)
 1100ENDPROC
 1110DEFPROCinput
 1120A%=(32768-ADVAL(1))DIV4096:
VX%=VX%+A%:SOUND16,-1*ABS(A%),4,
2
 1130VY%=VY%-G%:IF ADVAL(0) THEN
 PROCsound1:VY%=VY%+TH%
 1140ENDPROC
```

GAME: SIMON

AUTHOR: JOHNATHAN O'DONNELL

RUNS ON: A BBC B

Can you keep up with your computer? This is an adaptation of the now famous party game, Simon — you know, the one with all the flashing coloured lights. All you have to do is copy the computer sequence the computer throws at you. It all starts with just one colour and then builds up combinations of colours until you make a mistake or take too long deciding which colour is next.

The game is controlled using keys, 1=red, 2=green, 3=yellow, 4=blue. Full instructions are included in the listing.

```
   10MODE7:PROCINS
   20DIMP$(8),S(8):MODE2:FORA=1T
O8:S(A)=10:NEXT:VDU23;8202;0;0;0
;
   30GCOL0,7:A$="":S%=0:MOVE 700
,500:DRAW 1050,500:DRAW 700,850:
DRAW 350,500:DRAW 700,500:DRAW70
0,850:DRAW700;150:DRAW1050,500:M
OVE350,500:DRAW 700,150
   40 COLOUR10:PRINTTAB(7,1)"'SI
MON'":COLOUR6:PRINTTAB(7,29)"SCO
RE=0":COLOUR2:PRINTTAB(7,9)"1":C
OLOUR3:PRINTTAB(14,9)"2":COLOUR1
:PRINTTAB(7,22)"4":COLOUR4:PRINT
TAB(14,22)"3"
   50 IF LENA$>0 THEN FOR B%=1TO
LENA$:FORC%=1TO500:NEXT:A=VALMID
$(A$,B%,1):PROCTRI:NEXT
   60A=RND(4):PROCTRI:A$=A$+STR$
A:GOTO140
   70 B=1:C=690:D=497:E=690:F=17
0:G=370:H=497:RETURN
   80 B=2:C=690:D=505:E=690:F=83
5:G=360:H=505:RETURN
   90B=3:C=710:D=505:E=710:F=835
:G=1035:H=505:RETURN
  100B=4:C=710:D=498:E=710:F=170
:G=1035:H=498:RETURN
  110 DEFPROCTRI:SOUND 1,-10,60+
(12*A),10:ON A GOSUB 80,90,100,7
0:GCOL0,B:MOVE C,D:MOVE E,F:PLOT
85,G,H
  120IF LENA$<40 THEN FOR A%=1 T
O (40-LENA$)*50:NEXT
  130 GCOL0,0:MOVE C,D:MOVE E,F:
PLOT85,G,H:ENDPROC
  140 FORD%=1TOLENA$:Z%=0
  150*FX15,1
  160B$=INKEY$(1)
  170 IF Z%=275 THEN SOUND1,-12,
30,20:PROCT
  180 IF VALB$<1ORVALB$>4THEN Z%
=Z%+1:GOTO160
  190 IF B$=MID$(A$,D%,1) THEN A
=VALMID$(A$,D%,1):PROCTRI ELSE S
OUND 1,-12,40,20:PROCT
  200 S%=S%+1:COLOUR6:PRINTTAB(7
,29);"SCORE=";S%:NEXT
  210FORX%=1TO5000:NEXT:GOTO50
  220 DEFPROCT:FORA=1TO2000:NEXT
:CLS:IF S%<S(8) GOTO 290
  230 COLOUR2:PRINTTAB(2,5);"Wel
l Done !":PRINT'':COLOUR1:PRINT"
What Is Your Name ? "':COLOUR6:I
NPUTP$
  240 IF LEN(P$)<15 THEN GOTO260
  250 PRINT'"SORRY ! Too Long ":
W$=GET$:CLS:GOTO230
  260 R=9:REPEAT R=R-1
  270 UNTIL R=1 OR S(R-1)>S%
  280 FORJ=8 TO R+1 STEP -1:P$(J
)=P$(J-1):S(J)=S(J-1):NEXT:P$(R)
=P$:S(R)=S%
  290 CLS:COLOUR10:PRINT'"    BES
T SCORES":COLOUR3::FORJ=1TO8:PRI
NT''P$(J);TAB(17);S(J):NEXT:PRIN
T;COLOUR1:FORV=1TO1000:NEXT:PRI
NT"PRESS ANY KEY"
  300 *FX15,1
  310 J$=GET$:CLS:GOTO30
  320 DEFPROCINS
  330 PRINT" All You Have To Do
Is Copy TheComputers Sequence Of
 Colours Which Will/Start With O
ne Colour And";
  340 PRINT" Build Up UntilYou M
ake A Mistake Or Take To Long
   Deciding Which Colour Is Next
."
  350 PRINT''"To Do This Use The
 Keys :-"':PRINT"(1)-RED":PRINT'
"(2)-GREEN":PRINT'"(3)-YELLOW":P
RINT'"(4)-BLUE"'':PRINTCHR$130;"
PRESS ANY KEY TO START ";:A$=GET
$:ENDPROC
```

GAME: REACT

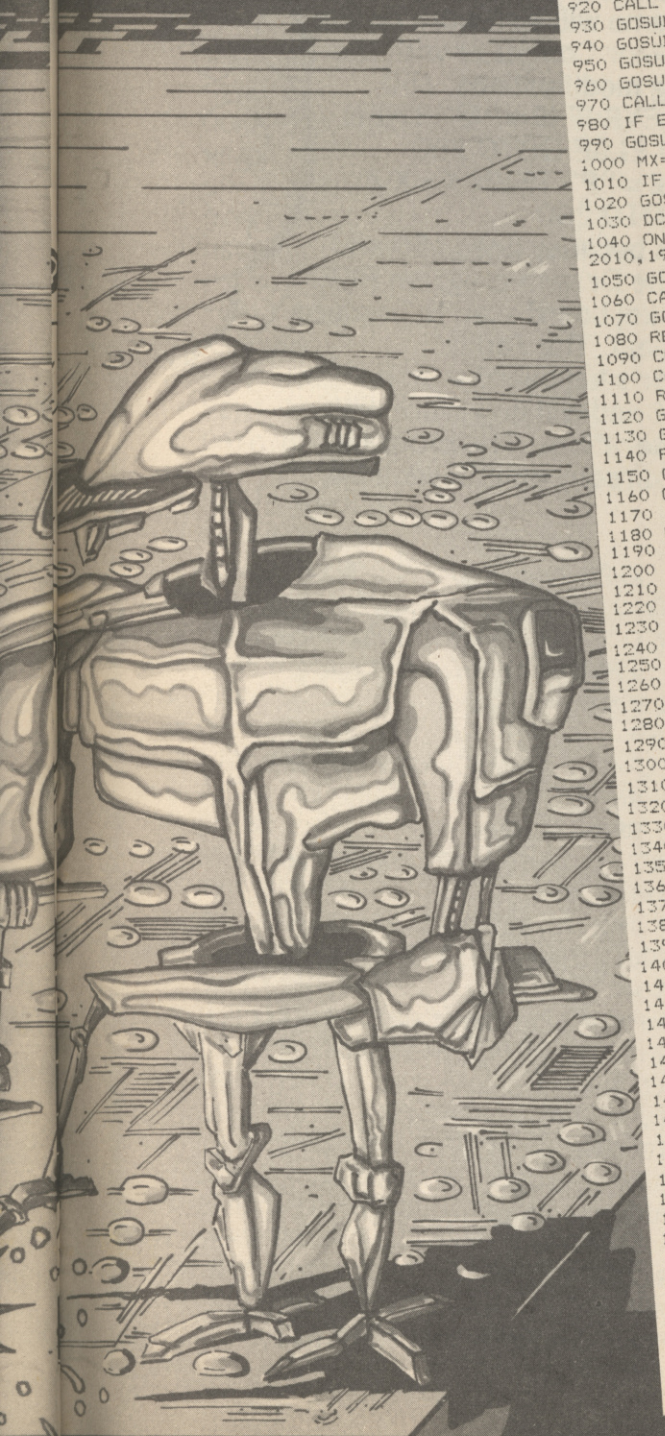
AUTHOR: CHARLES SHARP

RUNS ON: A TEXAS TI 99/4a IN 16K

```
100 CALL CLEAR
110 PRINT "            *RE-ACT*"
120 PRINT :::::
130 PRINT "THE OBJECT IS TO REACH THE":"INNER
REACTOR DOOR="
140 PRINT
150 PRINT "AVOIDING THE SECURITY ROBOT"::
160 PRINT "IF HE CATCHES YOU THEN YOU":"ARE DEAD"::
170 PRINT "WHEN HE RUNS EVERYTHING":"ELSE SHUTS
DOWN FOR A WHILE"::
180 CALL SOUND(200,1109,0)
190 FOR D=1 TO 2000
200 NEXT D
210 CALL CLEAR
220 PRINT "USE CURSOR KEYS TO REACH":"REACTOR
BEFORE TIME RUNS":"OUT AND IT EXPLODES"
230 PRINT
240 PRINT "SECURITY HAS GONE WILD"::"ALL THE
SYSTEMS ARE OUT":"OF SYNCHRONIZATIO
N AND THE";
250 PRINT "INNER DOORS CLOSE AND OPEN":"AT RANDOM"
260 PRINT :::
270 PRINT "          *GOOD-LUCK*"
280 CALL SOUND(200,1109,0)
290 FOR D=1 TO 2000
300 NEXT D
310 CALL CLEAR
320 R=24
330 C=16
340 RR=4
350 CC=4
355 REM ..BY C.A.SHARP..~83~
360 REM ..SET SCREEN
370 CALL SCREEN(16)
380 CALL CHAR(40,"FFFFFFFFFFFFFFFF")
390 CALL CHAR(97,"FFC3A59999A5C3FF")
400 CALL CHAR(120,"FFFFFFFFFFFFFFFF")
410 CALL CHAR(112,"0000081C241C1422")
420 CALL CHAR(104,"1C1C083E241C1422")
430 CALL CHAR(105,"00220099990022")
440 CALL HCHAR(1,1,40,32)
450 CALL HCHAR(24,1,40,32)
460 CALL VCHAR(1,1,40,24)
470 CALL VCHAR(1,32,40,24)
480 CALL HCHAR(3,3,40,28)
490 CALL HCHAR(22,3,40,28)
500 CALL VCHAR(3,3,40,20)
510 CALL VCHAR(3,30,40,20)
520 CALL HCHAR(5,5,40,24)
530 CALL HCHAR(20,5,40,24)
540 CALL VCHAR(5,5,40,15)
550 CALL VCHAR(5,28,40,15)
560 CALL HCHAR(10,15,40,7)
570 CALL HCHAR(14,15,40,7)
580 CALL HCHAR(11,15,40,2)
590 CALL HCHAR(12,15,40,4)
600 CALL VCHAR(11,20,40,3)
610 CALL VCHAR(11,21,40,3)
620 CALL VCHAR(15,21,40,5)
630 CALL VCHAR(5,15,40,5)
640 CALL HCHAR(24,16,32)
650 CALL HCHAR(3,16,32)
660 CALL HCHAR(12,5,32)
670 CALL HCHAR(12,28,32)
680 CALL HCHAR(7,15,32)
690 CALL HCHAR(17,21,32)
700 CALL HCHAR(12,20,32,2)
710 CALL HCHAR(18,7,40,5)
720 CALL VCHAR(19,7,40)
730 CALL VCHAR(19,11,40)
740 FOR A=22 TO 25
750 CALL VCHAR(8,A,40,7)
760 NEXT A
770 CALL COLOR(9,2,12)
780 CALL COLOR(11,5,1)
790 CALL COLOR(10,7,1)
800 CALL VCHAR(9,23,120,3)
810 CALL VCHAR(9,24,120,3)
820 REM ......SET TIME
830 TIME=41
840 TIME=TIME-1
850 IF LEN(STR$(TIME))=1 THEN 860 ELSE 870
860 CALL HCHAR(19,10,32)
870 FOR I=1 TO LEN(STR$(TIME))
880 CALL HCHAR(19,I+8,ASC(SEG$(STR$(TIME),I,1)))
890 NEXT I
900 REM ....
910 REM  ....**MAIN LOOP**
```

The nuclear reactor is going critical — and only you can stop it! You must negotiate the maze-like corridors of the reactor building to reach the core and deactivate the runaway reactor. Sounds easy eh? But you've not taken into account the security robot which patrols the corridors. Ordinarily he'd let you

pass once you've given him the security password — but he has been affected by the increased radiation and will blast any intruder without asking any questions! Oh yes, and you have to race against the clock. Full instructions are included in the program. Can you stop a nuclear blast?



```
915 RANDOMIZE
920 CALL HCHAR(R,C,112)
930 GOSUB 1150
940 GOSUB 1090
950 GOSUB 1150
960 GOSUB 2090
970 CALL GCHAR(12,21,E)
980 IF E=112 THEN 2390
990 GOSUB 1150
1000 MX=INT(RND*10)+1
1010 IF MX=1 THEN 1120
1020 GOSUB 1150
1030 DC=INT(RND*10)+1
1040 ON DC GOSUB 1730,1800,1870,1940,
2010,1940,2010,1940,2010,1730
1050 GOSUB 1150
1060 CALL HCHAR(RR,CC,104)
1070 GOTO 920
1080 REM ...CORE COLOUR
1090 COLL=INT(RND*15)+1
1100 CALL COLOR(12,COLL,1)
1110 RETURN
1120 GOSUB 1430
1130 GOTO 920
1140 REM .......MAN MOVES
1150 CALL HCHAR(R,C,32)
1160 CALL KEY(0,K,S)
1170 IF K=69 THEN 1180 ELSE 1230
1180 R=R-1
1190 CALL GCHAR(R,C,G)
1200 IF G>32 THEN 1210 ELSE 1220
1210 R=R+1
1220 GOTO 1400
1230 IF K=88 THEN 1240 ELSE 1290
1240 R=R+1
1250 CALL GCHAR(R,C,G)
1260 IF G>32 THEN 1270 ELSE 1280
1270 R=R-1
1280 GOTO 1400
1290 IF K=83 THEN 1300 ELSE 1350
1300 C=C-1
1310 CALL GCHAR(R,C,G)
1320 IF G>32 THEN 1330 ELSE 1340
1330 C=C+1
1340 GOTO 1400
1350 IF K=68 THEN 1360 ELSE 1400
1360 C=C+1
1370 CALL GCHAR(R,C,G)
1380 IF G>32 THEN 1390 ELSE 1400
1390 C=C-1
1400 CALL HCHAR(R,C,112)
1410 RETURN
1420 REM ......ROBOT MOVES
1430 FOR T=4 TO 29
1440 CALL HCHAR(4,T,104)
1450 CALL GCHAR(4,T+1,GC)
1460 IF GC=112 THEN 2310
1470 CALL HCHAR(4,T,32)
1480 NEXT T
1490 GOSUB 2090
1500 FOR VV=5 TO 21
1510 CALL VCHAR(VV,29,104)
1520 CALL GCHAR(VV+1,29,GC)
1530 IF GC=112 THEN 2310
1540 CALL VCHAR(VV,29,32)
1550 NEXT VV
1560 GOSUB 2090
1570 FOR CO=28 TO 4 STEP -1
1580 CALL HCHAR(21,CO,104)
1590 CALL GCHAR(21,CO+1,GC)
1600 IF GC=112 THEN 2310
1610 CALL HCHAR(21,CO,32)
1620 NEXT CO
1630 GOSUB 2090
1640 FOR VC=20 TO 5 STEP -1
1650 CALL VCHAR(VC,4,104)
1660 CALL GCHAR(VC+1,4,GC)
1670 IF GC=112 THEN 2310
1680 CALL VCHAR(VC,4,32)
1690 NEXT VC
1700 GOSUB 2090
1710 RETURN
1720 REM ......DOOR CONTROL
1730 CALL HCHAR(3,16,97)
1740 CALL HCHAR(12,5,32)
1750 CALL HCHAR(12,28,32)
1760 CALL HCHAR(7,15,32)
1770 CALL HCHAR(17,21,32)
1780 CALL SOUND(100,110,10)
1790 RETURN
1800 CALL HCHAR(12,5,97)
1810 CALL HCHAR(12,28,32)
1820 CALL HCHAR(7,15,32)
1830 CALL HCHAR(17,21,32)
1840 CALL HCHAR(3,16,32)
1850 CALL SOUND(100,110,10)
1860 RETURN
1870 CALL HCHAR(12,28,97)
1880 CALL HCHAR(7,15,32)
1890 CALL HCHAR(17,21,32)
1900 CALL HCHAR(3,16,32)
1910 CALL HCHAR(12,5,32)
1920 CALL SOUND(100,110,10)
1930 RETURN
1940 CALL HCHAR(7,15,97)
1950 CALL HCHAR(17,21,32)
1960 CALL HCHAR(3,16,32)
1970 CALL HCHAR(12,5,32)
1980 CALL HCHAR(12,28,32)
1990 CALL SOUND(100,110,10)
2000 RETURN
2010 CALL HCHAR(17,21,97)
2020 CALL HCHAR(3,16,32)
2030 CALL HCHAR(12,5,32)
2040 CALL HCHAR(12,28,32)
2050 CALL HCHAR(7,15,32)
2060 CALL SOUND(100,110,10)
2070 RETURN
2080 REM ....TIME COUNT
2090 TIME=TIME-1
2100 IF LEN(STR$(TIME))=1 THEN
2110 ELSE 2120
2110 CALL HCHAR(19,10,32)
2120 FOR I=1 TO LEN(STR$(TIME))
2130 CALL HCHAR(19,I+8,ASC(SEG$
(STR$(TIME),I,1)))
2140 IF TIME=0 THEN 2180
2150 NEXT I
2160 CALL SOUND(100,1760,0)
2170 RETURN
2180 REM .....DESTRUCTION
2190 CALL COLOR(2,14,1)
2200 FOR S=30 TO 0 STEP -1
2210 CALL SOUND(50,110,S)
2220 NEXT S
2230 CALL SOUND(300,110,0)
2240 CALL CLEAR
2250 CALL SCREEN(14)
2260 PRINT "WHO BLEW THE REACTOR
UP THEN":::::
2270 FOR D=1 TO 2000
2280 NEXT D
2290 END
2300 REM .....CAUGHT BY ROBOT
2310 CALL HCHAR(R,C,105)
2320 CALL SOUND(300,-1,0)
2330 CALL HCHAR(R,C,32)
2340 FOR DE=1 TO 1000
2350 NEXT DE
2360 CALL CLEAR
2370 PRINT "OH DEAR!RUN OVER BY
A ROBOT!":::::::::
2380 STOP
2390 FOR V=30 TO 0 STEP -1
2400 CALL SOUND(50,392,V)
2410 NEXT V
2420 CALL CLEAR
2430 PRINT "FANTASTIC YOU DID IT
WITH";TIME;"SECONDS LEFT"
2440 FOR D=1 TO 3000
2450 NEXT D
2460 END
```

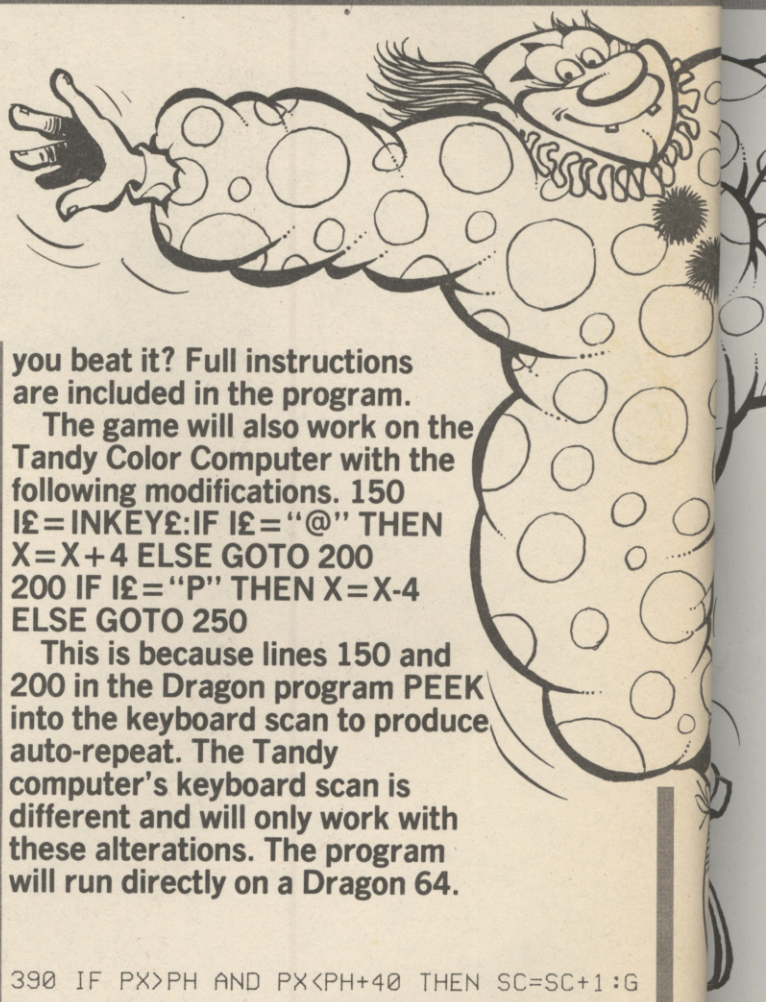
GAME: CIRCUS

AUTHOR: TONY CADDIES

RUNS ON: A DRAGON & TANDY COLOUR COMPUTER

Welcome to the Big Top! We've got a great competition for you — can you beat the bouncing balls — and the clock? The object of the game is to help Cuthbert the Clown throw balls through the moving hole. If you miss the hole it will begin to move down — making Cuthbert's task even more difficult. If you score a direct hit the hole will move up the screen giving you more of a chance.

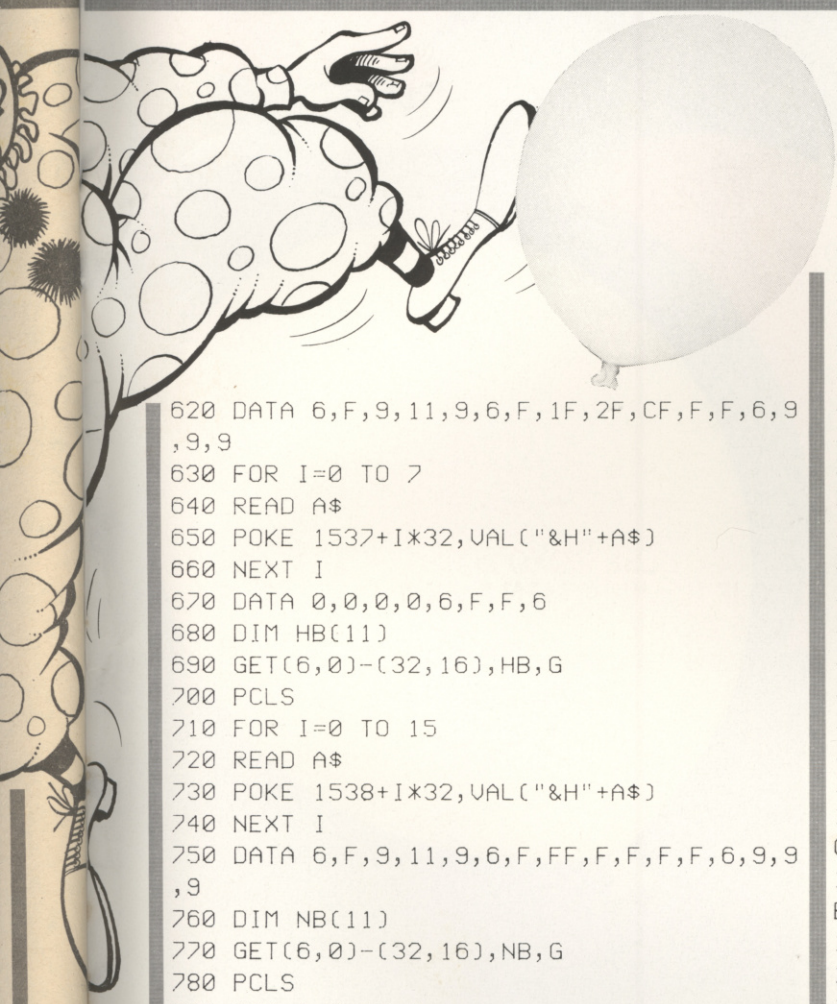
But beware, the clock is counting down — and you must beat it if you want to get a high score! The record scores so far are 18 points in 90 seconds and is 28 points — can you beat it? Full instructions are included in the program.



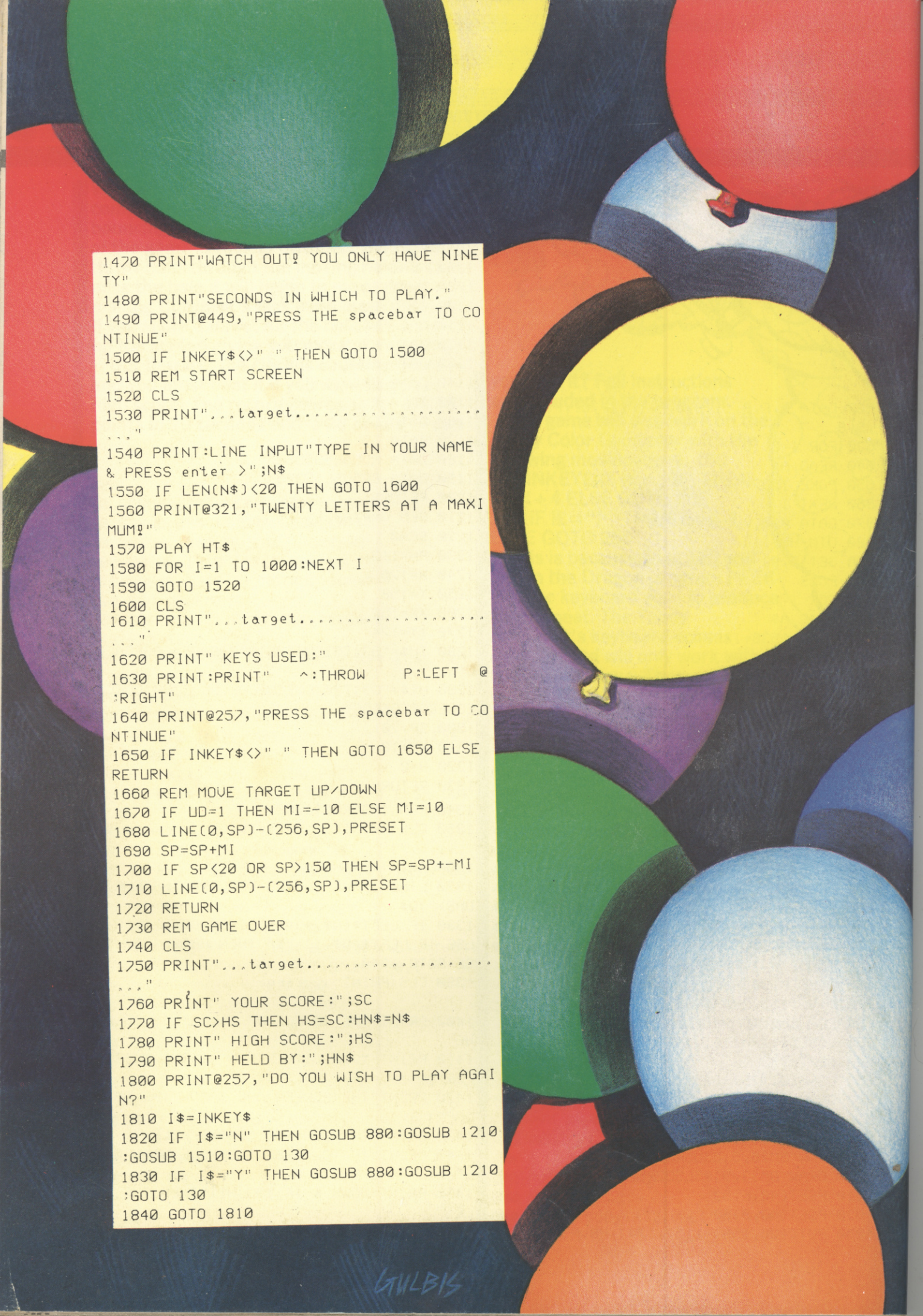
The game will also work on the Tandy Color Computer with the following modifications. 150 I£=INKEY£:IF I£="@" THEN X=X+4 ELSE GOTO 200
200 IF I£="P" THEN X=X-4 ELSE GOTO 250

This is because lines 150 and 200 in the Dragon program PEEK into the keyboard scan to produce auto-repeat. The Tandy computer's keyboard scan is different and will only work with these alterations. The program will run directly on a Dragon 64.

```
60 '
70 GOSUB 550 ''DRAW GRAPHICS''
80 GOSUB 880 '''DRAW SCREEN'''
90 GOSUB 1050 ''READ  NUMBERS''
100 GOSUB 1210 ''SET VARIABLES''
110 GOSUB 1340 ''INSTRUCTIONS?''
120 REM MOVEMENT
130 SCREEN 1,1:PLAY TU$:TIMER=0
140 REM READ KEYS
150 IF PEEK(338)=251 THEN X=X+4 ELSE GOT
O 200
160 XX=XX+4
170 IF XX>252 THEN XX=251:X=XX-26
180 IF B=1 THEN PUT(X,Y)-(XX,YY),NB,PSET
:GOTO 200
190 PUT(X,Y)-(XX,YY),HB,PSET
200 IF PEEK(338)=239 THEN X=X-4 ELSE GOT
O 250
210 XX=XX-4
220 IF X<6 THEN X=7:XX=X+26
230 IF B=1 THEN PUT(X,Y)-(XX,YY),NB,PSET
:GOTO 250
240 PUT(X,Y)-(XX,YY),HB,PSET
250 IF B=1 THEN GOTO 270
260 IF INKEY$="^" THEN B=1:PX=X+5:U=Y-6:
PUT(X,Y)-(XX,YY),NB,PSET:SOUND 50,1
270 IF B=1 THEN GOSUB 350
280 LINE(0,SP)-(PH,SP),PSET
290 LINE(PH,SP)-(PH+40,SP),PRESET
300 LINE(PH+40,SP)-(256,SP),PSET
310 PH=PH+NM
320 IF PH+40>247 OR PH<9 THEN NM=-NM:SOU
ND 100,1
330 IF TIMER>=4500 THEN PLAY HT$:GOTO 17
30
340 GOTO 140
350 REM BALL
360 '
370 U=U-1
380 IF U>SP THEN GOTO 420
390 IF PX>PH AND PX<PH+40 THEN SC=SC+1:G
OSUB 450:UD=1 ELSE UD=0
400 LINE(PX,U)-(PX+5,U+12),PRESET,BF:B=0
:PUT(X,Y)-(XX,YY),HB,PSET
410 GOSUB 1660:RETURN
420 U=U-4
430 PUT(PX,U)-(PX+5,U+12),B,PSET
440 RETURN
450 REM DRAW SCORE·
460 LINE(43,5)-(70,10),PRESET,BF
470 W$=STR$(SC)
480 FOR I=2 TO LEN(W$)
490 A=ASC(MID$(W$,I,1))
500 C=A-47
510 DRAW"BM43,5":DRAW"BM+"+STR$((I-1)*7)
+",5"+NM$(C)
520 NEXT I
530 RETURN
540 GOTO 540
550 REM GRAPHICS
560 PMODE 4,1:PCLS
570 '
580 FOR I=0 TO 15
590 READ A$
600 POKE 1538+I*32,VAL("&H"+A$)
610 NEXT I
```



```
620 DATA 6,F,9,11,9,6,F,1F,2F,CF,F,F,6,9
,9,9
630 FOR I=0 TO 7
640 READ A$
650 POKE 1537+I*32,VAL("&H"+A$)
660 NEXT I
670 DATA 0,0,0,0,6,F,F,6
680 DIM HB(11)
690 GET(6,0)-(32,16),HB,G
700 PCLS
710 FOR I=0 TO 15
720 READ A$
730 POKE 1538+I*32,VAL("&H"+A$)
740 NEXT I
750 DATA 6,F,9,11,9,6,F,FF,F,F,F,F,6,9,9
,9
760 DIM NB(11)
770 GET(6,0)-(32,16),NB,G
780 PCLS
790 FOR I=0 TO 7
800 READ A$
810 POKE 1536+I*32,VAL("&H"+A$)
820 NEXT I
830 DATA 0,0,0,0,6,F,F,6
840 DIM B(3)
850 GET(3,0)-(8,12),B,G
860 PCLS
870 RETURN
880 REM SCREEN
890 PMODE 4,1:PCLS
900 LINE(0,20)-(113,20),PSET
910 LINE(153,20)-(256,20),PSET
920 FOR I=1 TO 256 STEP 4
930 LINE(I,175)-(I,192),PSET
940 NEXT I
950 LINE(0,175)-(256,175),PSET
960 DRAW"BM5,5;R5L5D2R5D3L5"
970 DRAW"BM12,5;R5L5D5R5"
980 DRAW"BM19,5;R5D5L5U5"
990 DRAW"BM26,5;D5U5R5D2L5R2F3"
1000 DRAW"BM33,5;R5L5D2R5L5D3R5"
1010 PSET(40,6,5)
1020 PSET(40,9,5)
1030 PUT(126,158)-(152,174),HB,PSET
1040 RETURN
1050 REM READ NUMBERS
1060 DIM NM$(10)
1070 FOR I=1 TO 10
1080 READ NM$(I)
1090 NEXT I
1100 DATA BUU3BUBRR3BRBDD3BDBLL3
1110 DATA R5L3U5L2
1120 DATA R5L5U2R5U3L5
1130 DATA R5U2L5R5U3L5
1140 DATA BR4U5G4R5
1150 DATA R5U2L5U3R5
1160 DATA U5R5L5D5R5U3L5
1170 DATA E5L5
1180 DATA R5U5L5D5U3R5
1190 DATA BR5U5L5D3R5
1200 RETURN
1210 REM VARIABLES
1220 SC=0
1230 PH=113
1240 X=126
1250 Y=158
1260 XX=152
1270 YY=174
1280 TU$="O3;T6;CDET3GT6P99GAGE;GAGEGACC
C".
1290 HT$="O3;T20;CDECDECDECDE;T100;CDECD
ECDECDECDEEDC"
1300 SP=20
1310 NM=10
1320 B=0
1330 RETURN
1340 REM INSTRUCTIONS
1350 CLS:PRINT"...target.....
.....";
1360 PRINT:PRINT
1370 LINE INPUT"DO YOU REQUIRE INSTRUCTI
ONS>";Q$
1380 IF LEFT$(Q$,1)="N" THEN GOTO 1510 E
LSE IF LEFT$(Q$,1)="Y" THEN GOTO 1390 EL
SE GOTO 1340
1390 CLS:PRINT"...target.....
....."
1400 PRINT"THE OBJECT OF target IS TO MO
VE"
1410 PRINT"YOUR LITTLE MAN AT THE BOTTOM
 OF";
1420 PRINT"THE SCREEN AND THROW THE BALL
 UP";
1430 PRINT"THROUGH THE MOVING HOLE."
1440 PRINT"IF YOU MISS THE HOLE WILL MOV
E"
1450 PRINT"DOWN & IF YOU HIT THEN THE HO
LE"
1460 PRINT"WILL MOVE UP."
```



```
1470 PRINT"WATCH OUT! YOU ONLY HAVE NINE
TY"
1480 PRINT"SECONDS IN WHICH TO PLAY."
1490 PRINT@449,"PRESS THE spacebar TO CO
NTINUE"
1500 IF INKEY$<>" " THEN GOTO 1500
1510 REM START SCREEN
1520 CLS
1530 PRINT"...target.....................
..."
1540 PRINT:LINE INPUT"TYPE IN YOUR NAME
& PRESS enter >";N$
1550 IF LEN(N$)<20 THEN GOTO 1600
1560 PRINT@321,"TWENTY LETTERS AT A MAXI
MUM!"
1570 PLAY HT$
1580 FOR I=1 TO 1000:NEXT I
1590 GOTO 1520
1600 CLS
1610 PRINT"...target.....................
..."
1620 PRINT" KEYS USED:"
1630 PRINT:PRINT"   ^:THROW    P:LEFT  @
:RIGHT"
1640 PRINT@257,"PRESS THE spacebar TO CO
NTINUE"
1650 IF INKEY$<>" " THEN GOTO 1650 ELSE
RETURN
1660 REM MOVE TARGET UP/DOWN
1670 IF UD=1 THEN MI=-10 ELSE MI=10
1680 LINE(0,SP)-(256,SP),PRESET
1690 SP=SP+MI
1700 IF SP<20 OR SP>150 THEN SP=SP+-MI
1710 LINE(0,SP)-(256,SP),PRESET
1720 RETURN
1730 REM GAME OVER
1740 CLS
1750 PRINT"...target.....................
..."
1760 PRINT" YOUR SCORE:";SC
1770 IF SC>HS THEN HS=SC:HN$=N$
1780 PRINT" HIGH SCORE:";HS
1790 PRINT" HELD BY:";HN$
1800 PRINT@257,"DO YOU WISH TO PLAY AGAI
N?"
1810 I$=INKEY$
1820 IF I$="N" THEN GOSUB 880:GOSUB 1210
:GOSUB 1510:GOTO 130
1830 IF I$="Y" THEN GOSUB 880:GOSUB 1210
:GOTO 130
1840 GOTO 1810
```

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FEBRUARY 1984 Vol III No 5

Bumper bundle!

If you are looking for software for that new computer Santa brought you this Christmas, then this issue of *Computer and Video Games* is the one for you! If you look carefully, you'll find a bumper 52 page Book of Games attached to the issue. It's packed with listings for all the top micros — and there are a few surprises among them, believe us! All that, plus the regular bundle of top games listings in the issue itself. What more could a micro owner want!

What indeed! Well, how about a run down of the latest extra bits you can plug in or add on to your computer to make games playing more fun? Or perhaps you'd like to read the inside story of the origin of that lovable denizen of the arcades, Pacman? There's more from Japan too in this special feature.

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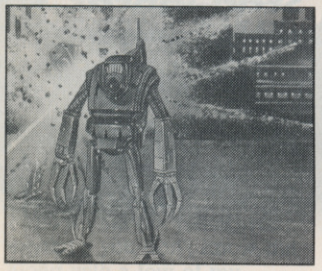

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The feathered fiends are coming to take you away — unless you can avoid their talons! Action for Sharp MZ80K owners. Can you steer clear of these birds?

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There's this giant beast chasing you through the forest and it's getting closer all the time. Animal magic for the Oric.

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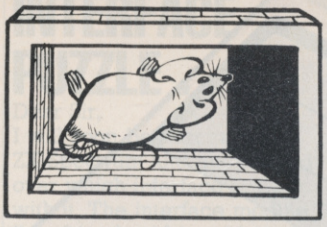

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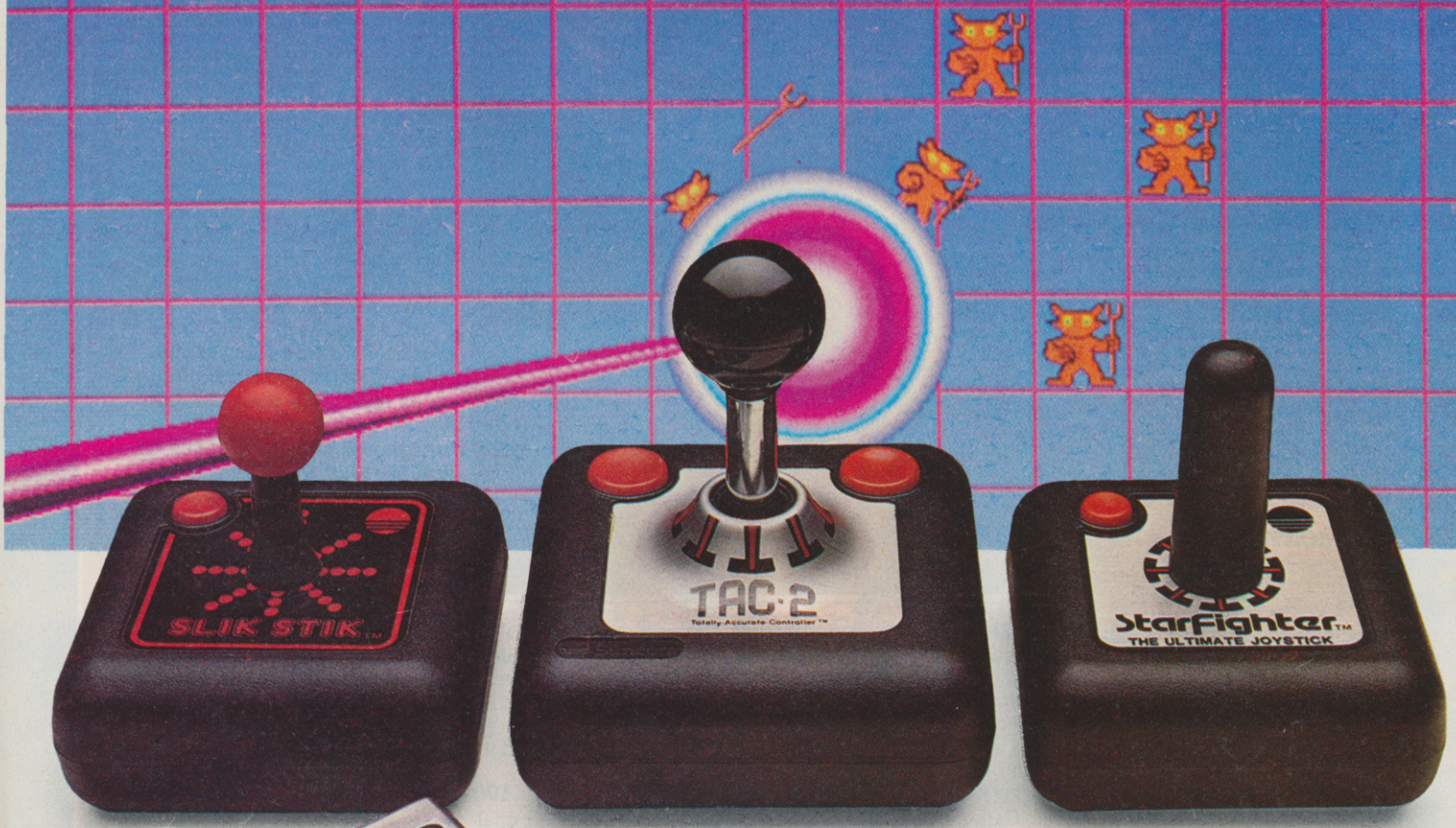
Next issue: **February 16th**

HOW TO MAKE A RED DEVIL SEE RED

with accurate control from Suncom



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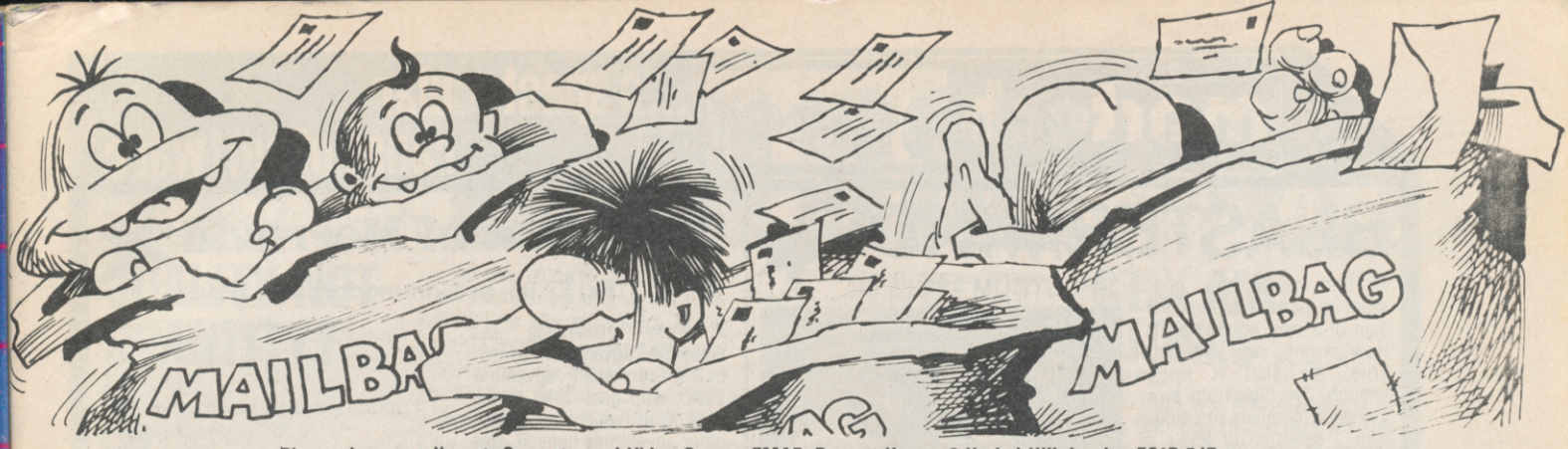

Please drop us a line at: Computer and Video Games, EMAP, Durrant House, 8 Herbal Hill, London EC1R 5JB.

MODEM FOR THE DRAGON

Dear Sir,
In your December issue you stated you do not know of any modems currently available for the Dragon 32.

Not so! Microcomputer Resources Ltd manufacture a Prestel/Viewdata interface which will allow you to link up to Micronet.

Maplin Electronic Supplies also sell a RS232 interface kit which enables Dragon users to link up to virtually any viewdata system or even Maplin's own Cashtel system.
S. C. Parnell,
Benfleet,
Essex.

BBC MICRO MYSTERY

I own a BBC Model B and at the side of my micro's keyboard there is a hole which is covered with plastic. I know I am not telling you anything you don't know but along with a few of my friends who also own BBC micros I could not resist the temptation to push it in. When it came off, I found that instead of seeing an interface for the ROM cartridges, which I had expected to see, I saw over half of the loudspeaker overlapping from the position where it should have been.

This mispositioning of the loudspeaker accounted for the coarse sound I had been getting even on a −15 setting. This was easily overcome by just taking the cover off and moving it slightly. But I still do not know what I set out to find in the first place so could you please tell me when the ROM cartridges will be available in the shops?
Jason Dines,
Billericay,
Essex.
Editor's reply: At the present moment there are no ROM cartridges available for the BBC. Acornsoft are thought to be planning to release games cartridges some time in the future. As soon as they are out you'll be able to read about them in our Games News pages.

STOPPING THE VIC

Dear Sir,
I am writing to enquire what POKE command can be used on the Vic-20 to stop the STOP key functioning. I have seen this used on cartridges for the Vic-20, as when the STOP key is pressed, which would normally break out of the program, the program will continue as normal.
Andrew Griffiths,
Mirfield,
W. Yorkshire.
Editor's reply: The run/stop — restore keys can be disabled with this line: POKE 808, PEEK (808)+2:POKE 37150, PEEK (37150) AND 127: The keys can be turned on again with this line: POKE 808, PEEK (808)−2:POKE 37150, PEEK (37150) OR 127.

POKEING THE ATARI

Dear Sir,
I own a 16k Atari 400 and recently I came across a few POKES. When I POKE 742,0 I discovered I now have 63k. Is that true? And also am I the first to discover that POKEing 703,4 into the memory gives a text window to GR0? Finally, the POKE which was published in December's issue was in the Atari Basic reference manual anyway! (Appendix 1-3).
Michael Yick,
Sowerby Bridge,
W. Yorkshire.
Editor's reply: Unfortunately, expanding your Atari's memory is not so simple or cheap.

As you type in a Basic program, the amount of free memory goes down. The computer, therefore, keeps a counter in its memory with a value to tell it how much memory is remaining. So when you ask your machine how much free RAM you have, it simply looks at the value of this counter.

You have probably guessed that part of this counter is at location 742, and what you are doing is altering this counter. This does not alter the amount of RAM, but alters the amount which the machine THINKS that it has!

If the machine thinks that it has more memory than it should, it will try to let you type in a larger program than allowed. This will then cause a crash, probably erasing all your hard work.

The only use for such a POKE command is to fool your friends into thinking that you've typed a 48k program in, in 10 minutes!

INTERFACE PUZZLE . . .

Dear Sir,
I will soon be purchasing a ZX Spectrum and am puzzled over which interface to buy with it. The interface module I'm after should be able to be used with most of the software for the Spectrum 48k i.e. most of the games from Ultimate, Imagine and Silversoft. Another factor to be taken into account is price. I would want it to cost about £15 to £20, maybe a little more. Please could you also recommend the best compatible joystick with price to be taken into consideration.
R. J. Cosgrove,
Wrexham,
Clwyd.
Editor's reply: There are a lot of joystick interfaces around and all use different software. Most new software will probably be written for the new Sinclair Interface 2 although the only one that works with all games would be a programmable Interface such as the AGF. One of the most popular joysticks is the Kempston Interface and joystick, with a price of around £30.00.

WORRIED TEXAS . . .

Dear Sir,
Recently, whilst browsing through the mags shelf of my local W. H. Smith, I noticed a computer magazine screaming that Texas instruments are pulling out of the home computer market due to great financial losses.

Two questions — does this mean that TI will not be manufacturing any more cartridges, modules, ROMS (whatever you want to call them!) and secondly, does this mean the price of printers, disc drives modems etc. will come down in price?

The article says, "as many as half a million units could be sold off before Christmas for as little as £50 each." I, being a TI user, am worried in case my machine goes wrong — will TI repair it?
Paul Boakes,
Rochester,
Kent.
Editor's reply: TI's announcement that they are pulling out of the home computer market is bound to lead to slashed prices on hardware, software and peripherals.

On the subject of servicing, TI have promised to offer a service to all people who bought their machines. There is considerable pressure on them to keep this promise and keep faith with the public.

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BLASTERMIND!

SPECTRUM 48k £5.50

At first glance this might seem to be just another version of a very popular game. How wrong can you be!!! True, the start is simple enough. The Spectrum picks a code of numbers or colours with a selection of levels of difficulty — and invites you to do the same. You then take it in turns to guess each others code from the clue supplied after each guess. An extremely well written, fast and very clearly displayed game, with almost inevitable defeat.

This was exactly as intended but unfortunately *something went wrong*. During the programming strange uncomplimentary messages began to appear on the screen. At first they were so few they were not taken too seriously, but soon they could no longer be ignored. Somehow the Spectrum had been given a personality — a rather devious, supercilious, dislikeable, hateful, horrible mind.

Side B contains a version of the game compatible with the excellent Currah µSpeech unit — even worse!!

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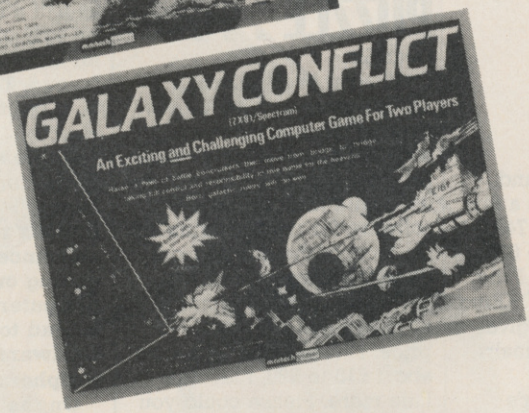

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MAILBAG

QUALITY NOT QUANTITY?

Dear Sir,
I have recently heard people criticising the CBS Colecovision because of the price of the games. These people are mostly Spectrum owners and I feel that this is a certain case of "quality not quantity". The Coleco system has by far the best graphics, better than nearly all home computers, and the games are ones which gamers are not likely to get bored with quickly.

The software list will be enhanced by Activision, Parker and Imagic, the latter's games for Intellivision being startling, so the games for the Coleco should in theory be truly magnificent when you consider the huge amount of built-in ROM.

I feel that anyone who seriously wants arcade-type games at home should go for the CBS Colecovision. Should this letter be published, I feel it would put many Spectrum owners very firmly in their place.
Tom Stungo,
Aylesbury,
Bucks.

REVIEWER RAPPED

Dear Sir,
I am writing to you because I am disgusted with your reviewer's views on the Electron. I do realise that the reviews are the opinion of one person, but before he makes any comparisons with another machine he should make sure he has all the facts.

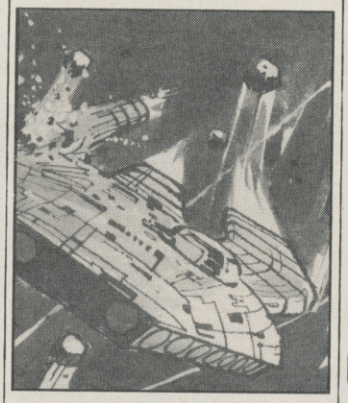
Firstly, I would like to know why in his review of the Acorn Electron he states that it's a superior machine to the Atari? The Electron cannot produce sound through the television like the Atari. It has only 16 colours and Atari has 256 with 128 displayed at any one time.

There are many more differences, which in my opinion make the Atari far superior. I am slightly biased, just like your reviewer seems to be towards the Electron and BBC machines.

In the review on the 600XL and 800XL he states that the 600XL is 16k standard, but it can actually be expanded to 64k, and the 800XL comes with 64k. Both machines have 24k ROM and not 10k ROM as stated.

I would also like to add that one great advantage that the Atari gives, is the compatibility between the old and new machines. Unfortunately, a lot of manufacturers (i.e. the Acorn Atom and Electron which are two totally different machines requiring separate software), do not consider the users. Therefore, I thank Atari for enabling me to keep all my software library which has cost me over £200 plus, when I upgrade to their latest model.

I would just like to say that I find your magazine excellent, but please review your reviews before you publish. Wrong information could easily mean the downfall of a good machine.
R. T. Green,
Crumpsall,
Manchester.



VECTREX ERRORS?

Dear Sir,
I recently purchased the Vectrex computer games system and have found a few faults with two of its games, Spike and Minestorm.

The instructions for Minestorm say that when you clear thirteen minefields you enter a new universe with space ships and space dust to contend with. So far I have cleared 24 minefields with no sign of a new universe at all. Is this a misprint in the booklet?

The second game Spike gives you a lot of points if you move Molly's cage to the far left of the screen and jump for it. You lose a life but you can get a maximum of 65,000 points for doing this. Is this a fault or is it intended?
J Hansford,
Doncaster,
S. Yorks.

SNOWFLAKES FOR ORIC

Dear Sir,
As it is approaching Christmas and the colder months, there will be some snow (hopefully). But just in case there isn't, here is a program for Oric 1 owners. It draws snowflakes and develops into quite a nice pattern when the screen fills up.

```
10 Paper0:INK 7
20 HIRES
30 POKE #26A, 10
40 X = (RND(1)*200) +20
50 Y=(RND(1)*160)+20
60 P=(RND(1)*255:PATTERN
P
70 CURSET X,Y,1
80 T=(RND(1)*12)+2
90 FOR A=1 TO T:CIRCLE
A,FB
100 FB=INT (RND(1)*4)
110 NEXT A
120 GOTO 40
```

This program runs on a 48k Oric. However, for the 16k version just miss out line 30.
Chris Speight,
Bedale,
N Yorks.

SPECTRUM COMPILER

Dear Sir,
Having recently started a course at university which involves computer programming with Pascal, I am interested in buying a Pascal compiler for my 48k Spectrum to help me with my studies. Please could you tell me where I could get one and how much it would cost?
John Peden,
Renfrewshire,
Scotland.
Editor's reply: The HiSoft Pascal is available for the 48k Spectrum from HiSoft, 13 Gooseacre, Cheddington, Leighton Buzzard, Bedfordshire, LU7 0SR for £25.00.

STIX AND STONES . . .

Dear Sir,
Although we were pleased to see that our game *Stix* for the Commodore 64 was reviewed in your December issue there does seem to have been some confusion on the part of your reviewer.

The game concerns a struggle to contain an evil bundle of energy known as the Stix so that its power can be harnessed for good rather than evil. Force fields must be built, using the "field synthesisers" provided. Each game starts with four.

There are a number of hazards to avoid — the most dangerous of these is the Stix itself), and to quote from the instructions supplied with the game:

"The second hazard results from a design fault in the field synthesisers (the manufacturers have promised to put it right in their next model, but that isn't going to help you now). If you pause for more than an instant while constructing a force field, the field stabiliser disengages sending a ripple of energy through the field that will destroy the synthesiser (unless you can complete the field before the ripple arrives). Listen out for the hissing sound that the ripple makes as it moves through the field."

Unfortunately in the review this particular feature of the game is described as "a software design fault" and the reviewer finishes by saying that "Although the game was exciting to play, I feel this particular version will have to iron out its mentioned defects to become a games player's favourite". Defects?

I hope that this letter doesn't sound like sour grapes. We've had so many excellent reviews of *Stix* that we can handle the odd mediocre one. But to state that the program is being sold with a known fault in the software doesn't enhance our image, nor is it fair to the author, Andrew Trott.
Peter Calver
Supersoft,
Wealdstone,
Middlesex.

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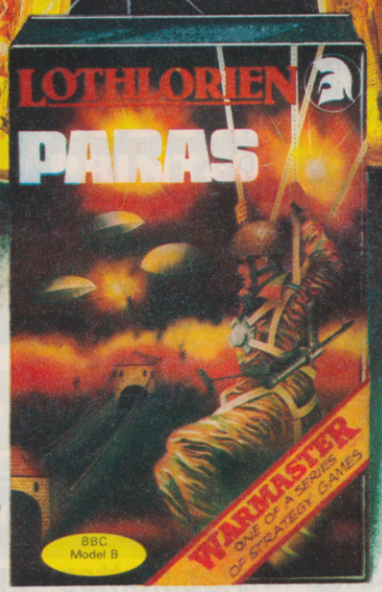

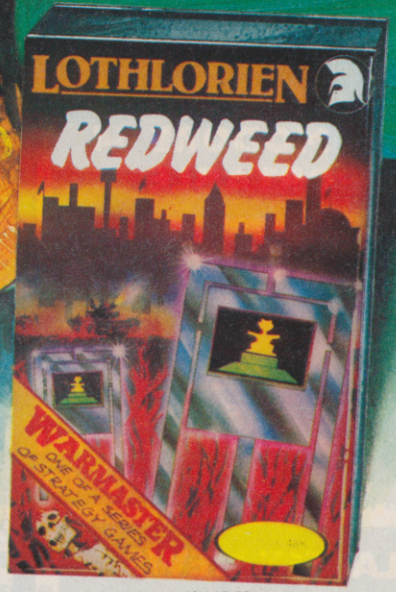

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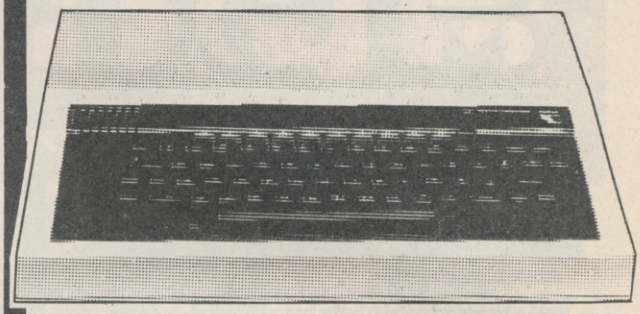

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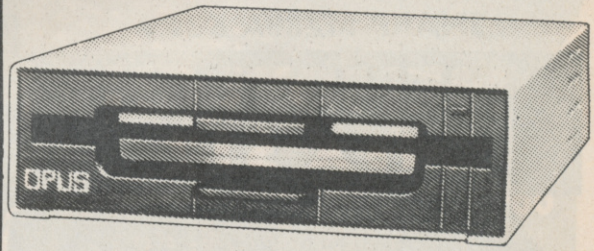

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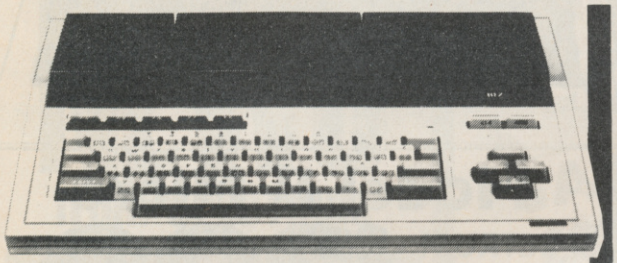

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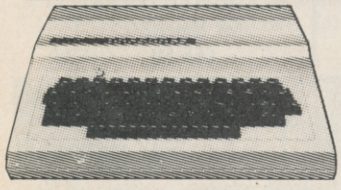

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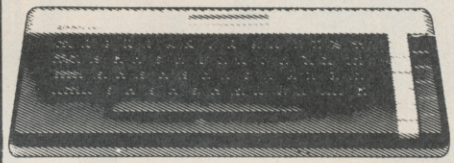

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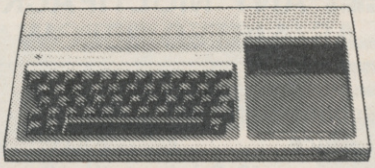

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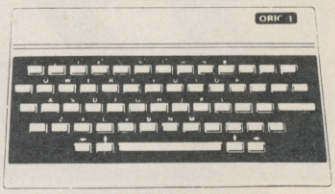

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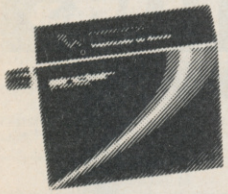

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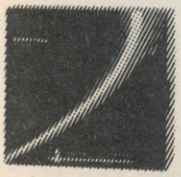

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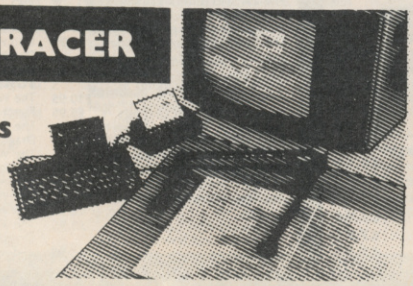

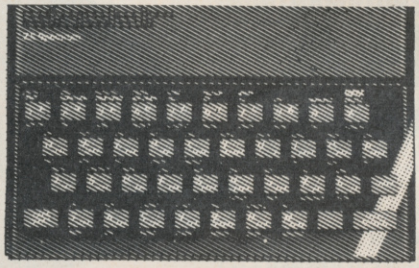

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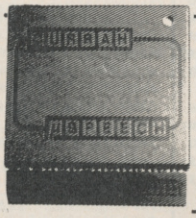

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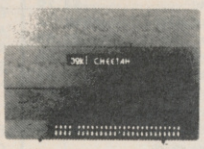

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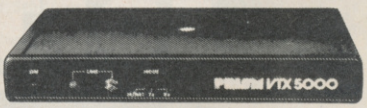

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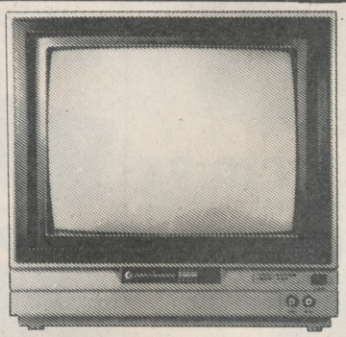

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PHOENIX, NOW THERE ISN'T A CHOICE...

Phoenix Software: Spangles House, 116 Marsh Rd. Pinner, Middlesex 01 868 3353

You can all stop holding your breath now! The moment you've all been waiting for has arrived. Yes, we're ready to announce the winners of our *Computer and Video Games* 1983 Golden Joystick Awards.

These are the awards that we hope will become a symbol of excellence in the software industry — a measure of a good software company and good products.

We know that many software houses work hard producing top quality software and provide good after sales service to their customers.

This is what *Computer and Video Games* hopes to reward by asking you, our readers, to vote for your top game and favourite software house — among other categories!

Since we first announced our Golden Joystick Awards several other award schemes have sprung up — but accept no substitutes, *C&VG*'s joysticks truly reflect popular support for a game or software house because YOU have chosen the winners.

Throughout the year the *C&VG* office has been flooded with nominations for our various Golden Joystick Awards. A large variety of personal tastes and personal preferences came to light as we analysed the results — proving that one person's favourite game was another person's bowl of cold porridge!

Literally hundreds of games for all the popular micros were nominated. But despite the number of home computers on the market — and the amount of software around — all our award winners were clearly head and shoulders above their competitors.

All the Golden Joystick Awards were presented at a special dinner held in London. Representatives from all the top software houses were there to see Radio One DJ and computer-buff Dave Lee Travis present the Golden Sticks. We'll have a full report on the celebrations and the names of the winners in the next issue of *Computer and Video Games*.

Don't forget — if you missed your chance to vote in 1983 why not get in first for our 1984 Golden Joystick Awards? Make sure you have a say in the awards next year by filling in the coupon we'll print in our next issue.

We're also keeping the names of our winners secret until next month too — but all will be revealed in our March issue. Unless you are one of the lucky people with an invitation to our grand awards dinner that is.

Remember we are also taking this opportunity to launch our search for the software stars of 1984. Competition is bound to be even tougher this year with more and more great games on the market for the new generation of home computers — so we hope you'll help us make sure that the right people get our awards.

We pride ourselves on being the top reader friendly magazine — so that's why we let YOU, our readers, select the winners. And this is why we feel that the *C&VG* Golden Joystick Awards are the only true reflection of what's best in the British software industry. Simply because YOU, the games player, choose the winners! And who can know better what makes a good game?

Meanwhile, thanks for joining in the voting for our 1983 awards — and if you think we've missed out a category for 1984 why don't you drop us a line — we're always open to suggestions!

There are a few surprises in the award line-up — but we're keeping up the mystery until next issue! So don't forget to rush out and get your copy of *C&VG* on February 16th.

ORIC Software

TANSOFT

ultima ZONE

A 100% machine code space trilogy—shoot the Walkons, avoid the bouncing Brunes, battle your way through the satellite zone. Requires 48k Oric.

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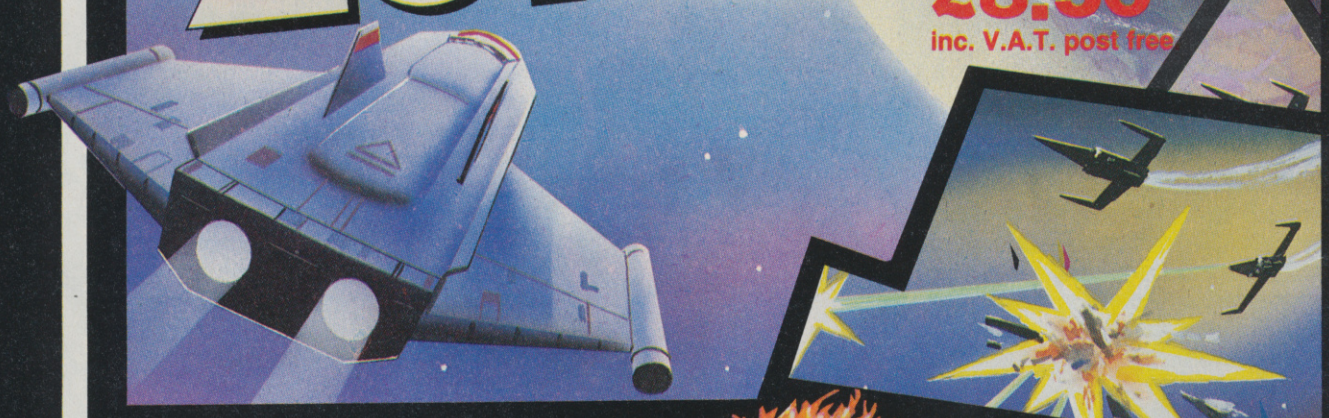

The HOBBIT

In co-operation with Melbourne House.

At last, this best selling adventure is available for the Oric based on J. R. R. Tolkien's book 'The Hobbit' (included) a complete text and graphics adventure. Requires 48k Oric. **£14.95** inc. V.A.T. post free.

Our software is available from all Oric dealers and most good software suppliers. In case of difficulty please contact us on Teversham (02205) 2261 or write to us at:

TANSOFT

Unit 1 & 2, Techno Park, Newmarket Road, Cambridge

TERRAHAWKS WINNERS!

Flaming Thunderbolts! When we announced our Terrahawks contest we never realised we'd start an invasion of letters and postcards which almost swamped the *C&VG* offices!

We had to call in Tiger Ninestien, Kate Kestrel, Zero and the rest of the Terrahawks team to help us get through the mounds of mail.

They managed to come up with two winners out of the pile and very soon Miss C. V. Gibson of Lancashire and Donald Glose from London will be the lucky owners of a Philips G7000 video games centre complete with Terrahawks cartridge! Your prizes are on their way.

POT THE BLACK

No sooner had we cleared the giant pile of Terrahawks mail another huge flood of competition entries swamped the office — this time it was Pot the Black which caused all the excitement!

We asked you to help Freddy Frinkle, the man with the Golden Cue, clinch the world snooker championship by solving an a-maze-ing snooker puzzle.

And hundreds of you took us at our word. After we called in a JCB earthmover to help us get through the mail, we finally managed to pick our 25 winners of Snooker games tapes, autographed by Snooker star Steve Davis and produced by new software house Visions.

We asked you to solve a maze and also if there could ever be a "break" of 162 in a game of snooker. And the answer is yes.

Here's how it works. Your opponent gives you a 159 start. You break off with a foul shot which gives your opponent four points, but leaves him snookered. He nominates a colour for red, pots that for 1 and black for 7 then scores 147 — the normal maximum break in snooker. He then wins the toss, pots the re-spotted black making a total "break" of 162. Simple when you know how!

SPECTRUM
John Chalmers, Birmingham. D. J. Hawkes, Wednesbury, W. Midlands. Justin Williams, Bowdon, Cheshire. Richard Burdon, Litchfield, Staffs. David Booth, Sheffield.

BBC B
John Abbott, Cookridge, Leeds. B. Johns, Southampton. J. Walker, Ramsgate. K. Wolstenholme, Manchester. Simon Campbell, Harrow.

COMMODORE 64
R. Lakhani, Tooting, London. Craig Pope, Hinckley, Leics. T. A. Scott, Cheltenham, Glos. Andrew Forrest, Hyndburn, Lancs. D. M. Allan, Otford, Kent.

ELECTRON
Andrew Shaw, Halifax, W. Yorks. Adam Ruddle, Bretton, Peterborough. Thomas Frawley, Coventry, W. Midlands. H. Borroughs, Wokingham, Berks. Philip Parrick, Greenock, Scotland.

VIC 20
Simon Carter, Rugby, Warks. Scott Walsh, Batley, W. Yorks. R. A. J. Jabber, Wirral, Cheshire. J. M. Seddon, Bolton. Nicholas Sharp, Penrith, Cumbria.

LEGGIT FOR MORE LEGGITS!

What's happened to all you eager Atari owners in the Portsmouth and Southampton areas?

We've still got some free Leggit tapes to give away, courtesy of Imagine Software and, to give everyone a fair chance — we've decided to go nationwide and offer the tapes to all of you!

So, calling all owners of the Atari 400/800 and 600XL, fill in the coupon below and rush it back to us — it's first come, first served — and the first ones into the *C&VG* office will be the lucky winners.

Send in your coupon, marked Leggit, to *Computer & Video Games*, 8 Herbal Hill, London, EC1R 5EJ.

Name .....

Address .....

.....

.....

Would the winners of the Atari/Dixons competition, featured in the June issue of *C&VG*, please get in touch with Clare Edgeley on 01-278 6556?

There are five winners in Trevor Truran's Ostentatious Pyrotechnics competition featured in the November issue of *C&VG*. All five winners have been announced in the January 84 issue — would they please get in touch with Clare on the same telephone number?

HANDS ACROSS THE WATER . . .

You've probably noticed from our Mailbag pages that *Computer and Video Games* refreshes the parts of the world that other computer magazines just can't reach. And recently a few of our overseas readers have been asking for a competition which runs for a bit longer than just a month to give them a chance to enter.

Many of our overseas readers don't get their issue of *C&VG* until well after the rest of you — simply because of the vast distances involved. So we've decided to run a competition just for them.

OK overseas *C&VG* fans here's what we want you to do. Send us a good games program — that's all. We know there must be some great games writers lurking in the far flung corners of the world — and we want to find you! Make the game as original as possible — that's our usual plea to programmers — but we're always interested in a top quality conversion of an arcade favourite or computer game.

We've got three Sinclair Spectrum computers up for grabs, plus some software from *C&VG*'s vaults thrown in, for the top three programs selected by our team of reviewers. Runners-up will receive *Computer and Video Games* Year Books and The Champ t-shirts.

The winning programs will be published in *C&VG* and you could find youself receiving an extra £25 if we vote your program a Game of the Month. All the programs we receive will be considered for publication. The closing date for the competition is July 16th 1984 — so you've got plenty of time to think about a program and get your entry off to us. Please fill in the coupon below and send it to *Computer and Video Games*, Overseas Readers Competition, Durrant House, Herbal Hill, London EC1R 5EJ.

Remember, this contest is only open to *C&VG* readers who live in Europe, Australia, New Zealand, Hong Kong — anywhere *outside* the British Isles!

OVERSEAS READERS COMPETITION

Name .....

Address .....

.....

Name of program ..... Machine it runs on .....

Any add-ons, extended basic, expanders etc? .....

Any other information .....

.....

.....

3D COMPUTERS

THE HOME COMPUTER SPECIALISTS
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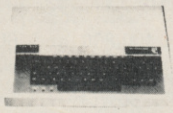
BBC MICRO  **MODEL B £399**

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01-992 5855

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Herts WD3 3AJ.
(0923) 779250

MILTON KEYNES
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Stacey Rushes,
Milton Keynes MK12 6HP.
(0908) 317832

LUTON
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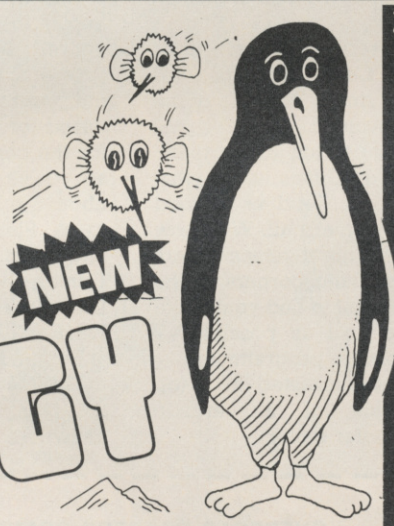
Caddington,
Luton Beds LU1 4EE.
(0582) 458575

Brrr! Deep in the confines of the frosty blue maze Pengy is pushing his way out of trouble. Pengy's frozen wasteland is a random maze constructed of blue ice blocks raided by the dreaded Sno-bees. The sno-bee's sting is deadly, but Pengy can retaliate by squashing them with the ice blocks that he pushes around. Pengy is based on one of this year's arcade successes, and this version captures all the action and addiction of the original. Packed full of features, super smooth graphics, flashing and bonus blocks, double score bonuses, dizzy bees, and hours of entertainment!

ANY SPECTRUM.



PENGY

TUTANKHAMUN

48K SPECTRUM ONLY—The treasures of TUTANKHAMUN are awesome—but so are the creatures that guard them. Explore the pharaoh's tomb which is a very large series of scrolling mazes separated by locked doors. You have a limited time to unlock the doors with the keys, and escape with the treasure. Luckily you are armed with lazers and smart bombs as you will have to face a horde of guardian cobras, spiders, skulls, monsters and mummies. TUTANKHAMUN is what you'd expect from Micromania—fast, furious arcade action-packed full of arcade features: 100% machine code, fast, smooth, hires arcade action; tomb is over 40 "screens" long, opening doors, keys, treasures, maps, level selection, sound effects and tunes.

CYBOTRON

The fastest, meanest robot shoot-out game ever. Based on the arcade game that made Defender look tame. CYBOTRON is impossible to beat—only speed and skill can save you from the chaotic robots. Packed full of features: Four types of robots, bombs, multi-directional plasma lazers, up to 50 robots on screen. 100% machine code, a game that will test your reactions to the limit. ANY SPECTRUM. keyboard only operation

SPECTRUM GAMES

100% machine code, fast, smooth, hires arcade action. Kempston, cursor key, joystick or keyboard operation. Games available direct £5.95 inc. p. + p. 24 HOUR DESPATCH, or from good software outlets. Trade enquiries invited. Good programs always wanted.

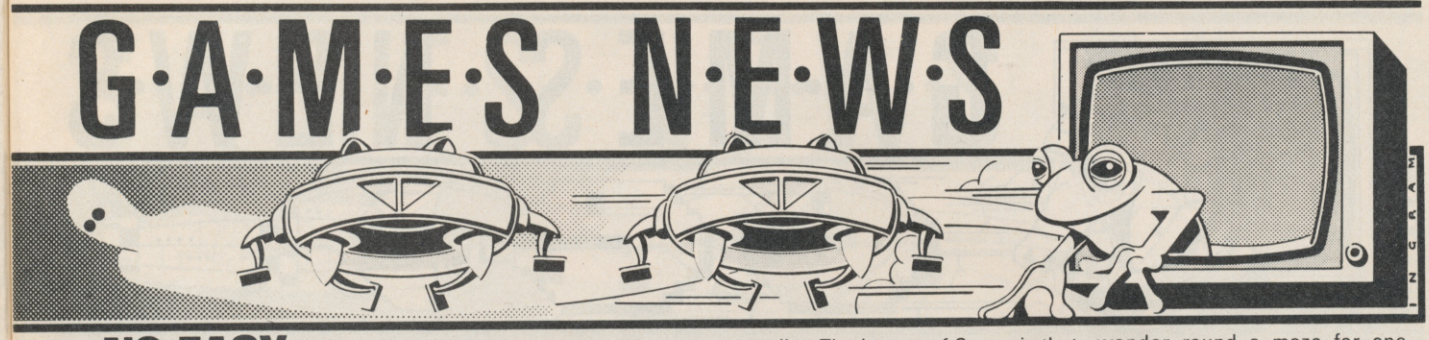
MICROMANIA

14 LOWER HILL ROAD, EPSOM, SURREY KT19 8LT

GHOST'S REVENGE

ANY SPECTRUM. Full arcade features; realistic gobbling, four coloured ghosts, dot and power pods, very intelligent chasing/running ghosts, eat blue ghosts for bonuses, tunnel, normal or INVISIBLE maze, 10 different selectable levels. 100% machine code action, excellent fast graphics, sound effects and tunes.

G·A·M·E·S N·E·W·S



NO EASY ESCAPE FROM SCARTHORPE!

URBAN UPSTART

Tired of fighting Orcs or exploring futuristic alien cities. Do you yearn for some 20th century adventure?

Urban Upstart is an adventure set in a present day inner city area called Scarthorpe. "A town so tough that even the dogs carry flick knives. The sort of town where rebuilding means a coat of paint and where people queue up to queue up for a job." Or so says the advertising blurb at any rate.

You play the part of a streetwise kid who's trying to escape the horrors of violence and deprivation in Scarthorpe, but escaping from the town is no easy task. Crazed muggers and corrupt policemen lurk around every street corner. Every location has a graphic display of the scene, ranging from a hospital to a building site.

If the secret police get too much, you can always save a game on tape and put your baseball bat down and have a rest.

The game runs on a 48K Spectrum and is available from Richard Shepherd Software at an asking price of £6.50.

GOOD NEWS FOR NEW WILLY FANS!

MINER WILLY

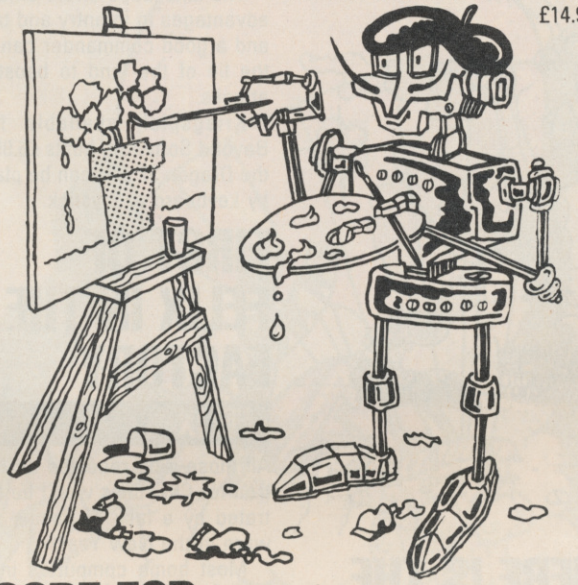
Miner Willy, the hero of Bug Byte's top selling Manic Miner, is shortly to be starring in a version of the game for the 64.

The game has been taken over by a new company set up by Matthew Smith — the author of the Spectrum version. His Software Projects company will now be marketing the game.

When the 64 version goes on sale, Software Projects will be announcing details of a competition, with a super prize for the first person to complete all the levels of the game.

Conversions from Spectrum to 64 are proving to be some of the most successful — and Software Projects are confident that the Commodore version of Miner Willy's adventures retains all the features of the Spectrum version.

Further good news for Willy fans is that the latest word coming out of Liverpool is that Manic Miner Part II is well into production.



SCOPE FOR ARCADE ACTION

SCOPE 64

If you like the sound of writing fast arcade games without the slightest knowledge of machine code, then read on.

Scope is a new, simple graphics programming language available for the Commodore 64. The game, its makers claim, is designed for writing fast arcade-style games without headaches.

SCOPE stands for Simple Compilation of Plain English, which gives a clue to why the programs run so fast. The program is in fact a very sophisticated compiler. The beauty of Scope is that it allows you to enter your game ideas in plain English words which it then miraculously compiles into machine code instructions.

The makers of the game stress that Scope was specifically designed as a graphics language to create games comparable with professionally produced software! Even the youngest of children can use it with ease.

Scope is produced by Interactive Software for the Commodore 64 and should retail at around £14.95.

BASIL AND THE BUBBLE MONSTERS

BUBBLE TROUBLE

Bubble Trouble will have you foaming at the mouth as you battle against mutant bath bubbles in a new game for the ZX Spectrum.

The game puts you in the striped shirt of Basil the Burglar, a small time crook who's taking his chances against the infamous bubble monsters guarding an ancient, treasure-filled tomb.

Basil has over fifty labyrinths to choose from, but he can only wander round a maze for one minute picking up valuable crowns, jewel-encrusted swords and precious stones before he has to leave the maze.

Time isn't the only thing against Burglar Basil — bouncing bubble monsters attack Basil from all sides. You must help Basil to avoid being drowned in the suds and collect as much of the tomb's treasure as you can.

The game has three different levels of difficulties, fifty different mazes, fine scrolling graphics and sound effects and is available from Arcade Software for the ZX Spectrum 48k for £5.50.

SINISTER PRECIOUS STONES

DOOMSDAY CASTLE

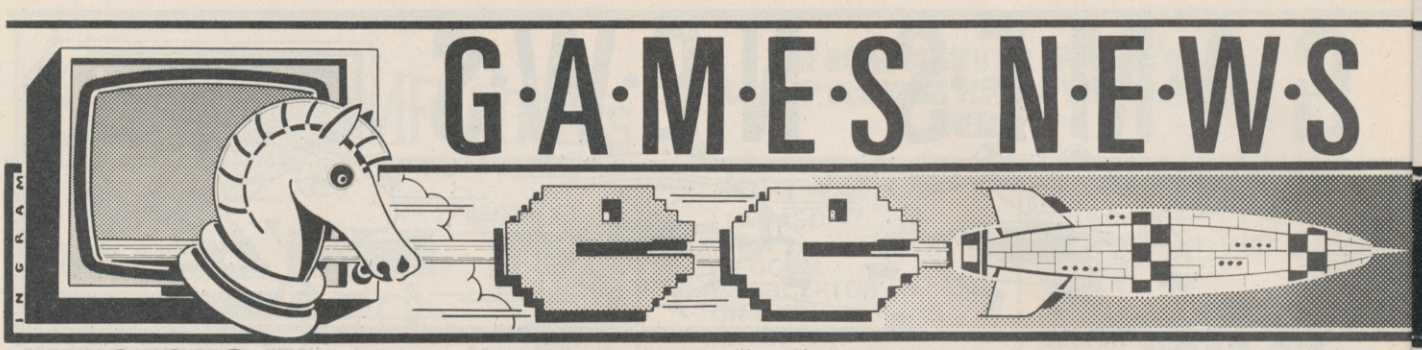
Saving the universe is never easy, especially when your adversaries include the phenomenally nasty Googly Bird. The Googly Bird is one of the many galactic ghouls you'll meet in Doomsday Castle, a new real time graphical adventure game for the ZX Spectrum.

The hero of the game is Ziggy — remember him from Fantasy's other smash hit game, the Pyramid?

Doomsday Castle is set in a universe ruled by Scarthax, the most evil being in the galaxy's history. Scarthax has searched the universe and collected the six ancient stones of life force. Now that he has brought them together under his control, he wields a power for evil far greater than the most horrifying nightmare could imagine.

The stones' awesome power is sending waves of corruption to every corner of the cosmos. Your task is to guide Ziggy through the Doomsday castle, attempt to wrest the stones away from Scarthax, and turn their power against their former master.

Doomsday Castle runs on a 48K Spectrum and is available from Fantasy Software costing £6.50.



G·A·M·E·S N·E·W·S

DUNGEONS IN DANGER ON ORIC?

RUNELORD

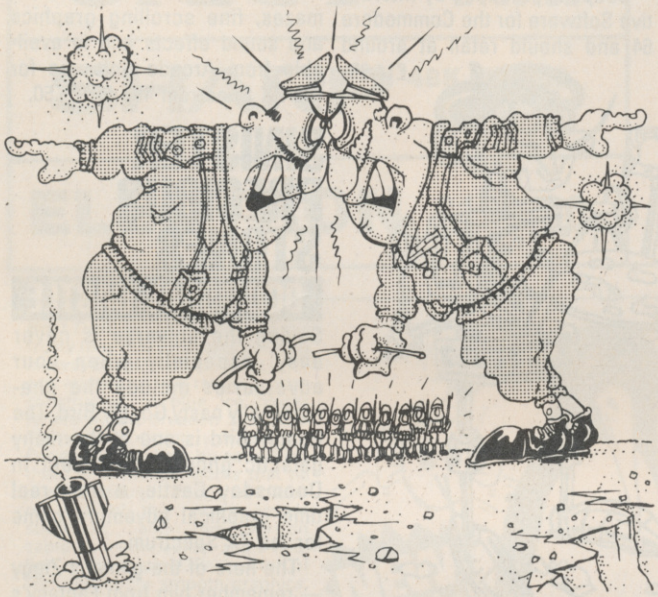
Hardened D&D addicts may look down their noses at 'upstart' computer adventure games. But a new game, Runelord, may shake their faith in D&D's supposed superiority.

Runelord is based on the role-playing fantasy game of the same name and it differs from most computer adventures in allowing you to develop certain characteristics of your chosen role. As in Dungeons and Dragons, each character has different quotas of wisdom, strength and dexterity. Runelord lets you create these for yourself, each one having its own particular strengths and weaknesses, good points and bad points. Furthermore, the game doesn't just consider aspects of the player's personality, but also how much equipment and experience each one has acquired during their 'lifetime'.

Once a role has been created — a warrior or magic user for instance — it can be saved on tape and then loaded into the game. This way a whole library of different roles can be made.

Runelord, like its board game namesake, is set in Celtic Britain. From here on, the usual Dungeons and Dragons' tactics of murder, arson and the odd bit of pillage take over. It sounds like good clean fun to us!

Runelord is available from Modular Concept Peripherals for the Oric 1 and costs £7.50.



HERE IS THE WEATHER FORECAST

KRIEGSPIEL

Weather forecasting becomes a vital part of military tactics for the commanders of tank warfare game Kriegspiel. An autumn offensive can suddenly grind to a halt as the landscape disappears below a blanket of snow or floods make waterways impassable.

Kriegspiel was first written by Ron Potkin on the Tandy TRS-80 in the late 70s and this early version even appeared in *Computer & Video Games*. Now Ron has utilised machine code and the Dragon's colours to bring new life to the game.

The action takes place over four screens of map with two opposing armies of heavy tank divisions, light tank divisions and mine laying infantry, battling for supremacy over a landscape of mountains, rivers, forest and field.

It's a game for two players or one player against the computer and can provide a simple 30 minute onslaught as both sides rush to take the opposing capital, or it can be as tactical as chess.

The landscape offers different advantages to infantry and tanks and a good commander can use the lie of the land to boost his attacks.

Kriegspiel, available from Beyond Software, costs £6.95 for the Dragon 32 and can be played by keyboard or joystick.

FIRST OF FELIX IN THE FACTORY

FELIX

All those who received an Electron for Christmas won't be frustrated by a lack of games software in the New Year.

Most home computers in the past have been plagued with a 'dead area' for a few months after their launch, before the independent software houses got their acts together and started producing games in bulk.

But it looks like Electron owners, problems won't be finding software for their computer, but choosing between the games that are about to flood the market.

Two companies who are leading the way in Electron software are Acornsoft, the software division of Acorn computers, and Program Power, a company that specialises in BBC software.

Program Power have released a range of ten games for the Electron including conversions of some of their most sucessful BBC games like the best selling Killer Gorilla.

The company haven't stuck to just converting old games but have some original titles up their sleeves.

Felix in the Factory is the first in a series of Felix adventures that Program Power are planning. The game places you in the position of the industrious Felix who is in charge of a run down factory for the weekend.

The rusty old generator in the basement of the factory keeps running out of fuel and you have to help Felix refill it with fuel before the entire factory grinds to a halt and production stops.

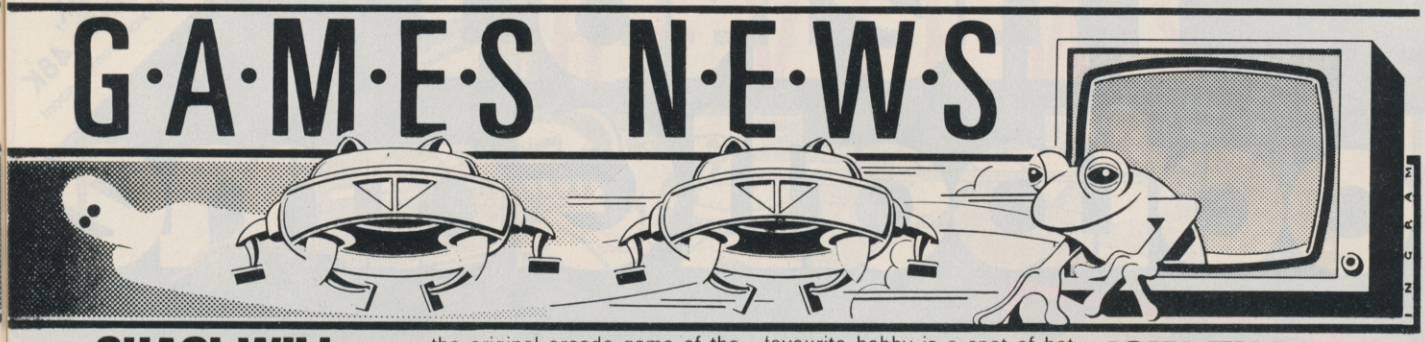
Felix must negotiate the rickety old ladders and conveyer belts to reach the generator, but his progress is slowed by gremlins who inhabit the building when the workers have gone home.

Felix's only hope of getting past them is to find a pitchfork and knock the nasty gremlins off the gangway and stop them putting a spanner in the works.

Another hazard is the giant rat that scurries across the packages in the factory's corners. The only way to get rid of the rabid rodent is to jump up and grab the bag of poison hanging from the ceiling. Felix in the Factory is available from Leeds-based Program Power for the new Electron and is priced £7.95.

Illustrations: Dorian Cross

G·A·M·E·S N·E·W·S



QUASI WILL GIVE YOU THE HUMP!

HUNCHBACK

It's a few centuries since the legendary Quasimodo first attempted to save the fair Esmaralda, and carry her off to the sanctuary of the Notre Dame's famous castle tower.

But the hunchback has swung right back into the thick of the action. Notre Dame's booming chimes will ring out again as the world's best known bell ringer hits your TV screen in the unlikely guise of a video game hero.

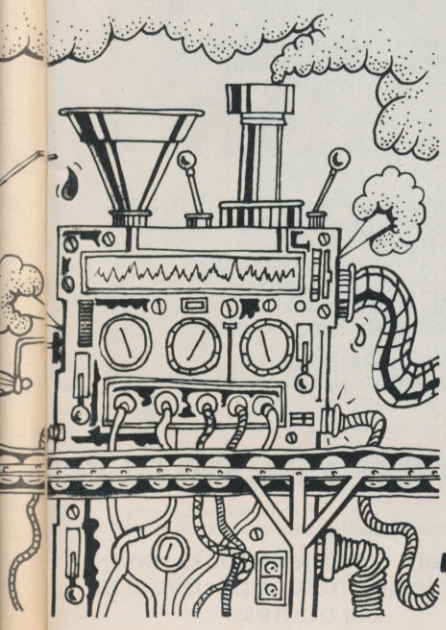
Quasimodo's task is the same as ever, to save the beautiful Esmaralda from the clutches of the evil Archbishop and his cronies.

You must help the unfortunate cripple jump flaming barrels, swing across murky pits and avoid loyal knights ready to thrust a lance into Quasi's hunched shoulders.

The game is played against a scrolling background of the cathedral. Each level consists of 15 screenfuls of high speed action and is piled with more and more difficult obstacles for Quasimodo to overcome before he reaches his true love.

Hunchback is a direct copy of the original arcade game of the same name and has been produced with full co-operation of the game's original manufacturers Century Electronics. It's the only official version available on any home computer.

Hunchback is available for the Sinclair Spectrum, Dragon 32, Commodore 64 and Oric computers in late December from the Manchester company, Ocean Software for £6.90.



WHEN THE BALLOON GOES UP . . .

CRAZY BALLOON

Around the world in 64k? Crazy Balloon certainly seems to make it possible on the Commodore 64.

Crazy Balloon takes you back to the age of romantic adventure where the sky's your limit and the far off horizon is your destination.

The game places you in the shoes of Nathan Wigglesworth, an eccentric explorer whose favourite hobby is a spot of hot air ballooning. He has decided to go on a marathon flight to test out the brand new balloon he has just acquired

Like all great heroes Nathan Wigglesworth would never think of embarking on a trip of a lifetime without the help of a life long pal T. C. Barton.

Like Nathan, T.C. enjoys a great adventure and is quickly ready to take off with his old pal.

As Nathan and T.C. start their sojourn, the weather report is good but many obstacles lie in the way of the chums' expedition. You must help them manoeuvre the balloon over churches and skyscrapers.

Twenty-six dangerous flight levels have to be completed before the two can claim the title of the World's Greatest Aeronauts.

Crazy Balloon is available for the Commodore 64 and is joystick compatible. The game is produced by the newly formed company Software Projects and costs £7.95.

JOIN THE CLUB AND WIN A BADGE

RIVER RAID

America's top independent video game manufacturer, Activision, have just released versions of two of their most successful games for the Atari 400/800.

River Raid is a super fast, all action, scrolling shoot-'em-up. You are flying a mission up river to destroy all enemy shipping and bridges in hostile terrain.

Activision will reward anyone who can score a million points with a River Raiders Club badge.

Also converted for the Atari home computers is the hit VCS game Kaboom. This challenges you to catch all the bombs being hurled by the mad bomber before they hit the ground and explode.

The games are in the shops now at £29.95.

MERCENARY SAVES THE GALAXY!

NEOCLYPS

The galaxy is facing the most dire crisis in its history. Neoclyps, a remote planet and a member of the Colonial Federation has been invaded. As the universe's foremost galactic mercenary, you must liberate the inhabitants of Neoclyps from the alien dictators.

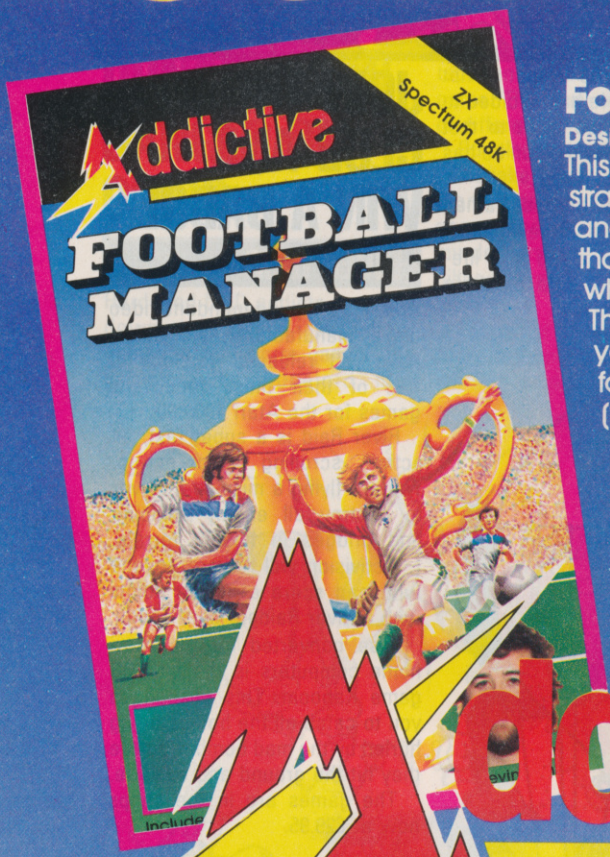
The invaders have set up a defence system of radar towers to detect any ships entering the planet's atmosphere. Your ship has been designed to withstand 12 collisions with the towers or with aggressive alien guards.

The game is written in a 100% machine code and includes a joystick option.

Neoclyps is available from Coventry-based PSS for the Commodore 64 and costs £7.95.

The No.1 Football Game

ZX81 16K, ZX Spectrum 48K
BBC and Oric versions coming soon!



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This outstanding game of skill and strategy is now widely available and you can join the many thousands of satisfied customers who have purchased the game. This is no five minute wonder – you will be playing this game for hours over many weeks (we know – our customers tell us!).

Kevin Toms

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Addictive

*ZX81 Chart, Home Computing Weekly 16.8.83

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Comments about the game from press and our customers

"FOOTBALL MANAGER is the best game I have yet seen on the Spectrum and my personal favourite of all the games on any micro ... To the ordinary person it is an excellent view of what can be done in the field of computer games ... The crowning glory of this game is the short set pieces of match highlights which show little stick men running around a pitch, shooting, defending and scoring ... It is a compulsive game but people who cannot take game sessions of 9 hours or so, which happened on one happy Sunday, will be grateful to know that there is a 'save to tape' option. FOOTBALL MANAGER has everything it could ... The originator, Addictive Games, certainly deserve the name." Rating: 19/20 (Practical Computing – August 1983).

"When I first received this game I spent the best part of the weekend playing it. Since then I have returned to it more often than any other. The truly addictive quality of this game is the remarkable way it mirrors the real football manager's problems ... "(Personal Computer Games – Summer 1983)

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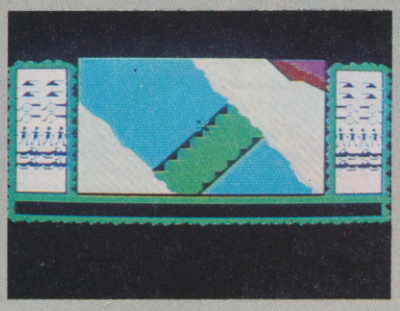
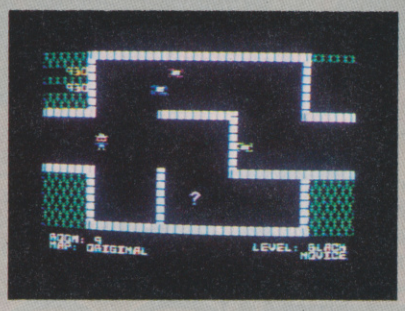


STONKERS



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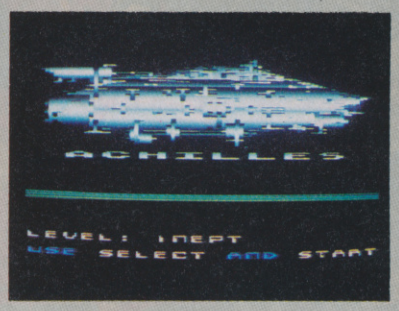

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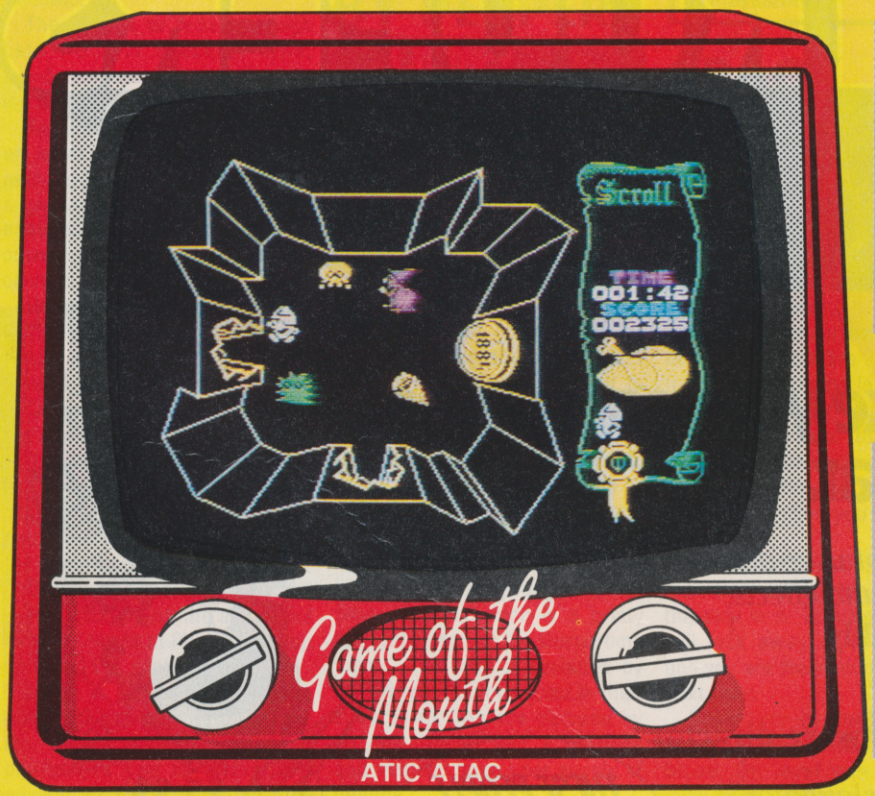
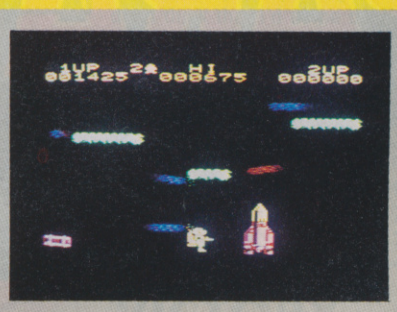
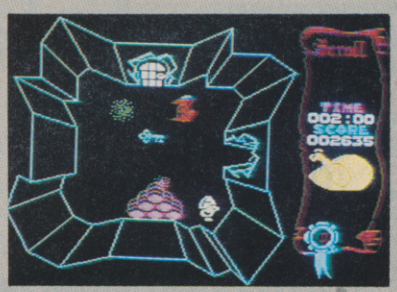


ATIC ATAC



JET PAC



ATIC ATAC

Our *Game of the Month* this issue is Atic Atac the latest game from Ultimate, which is rapidly gaining cult status among games players everywhere. Read our view of this interesting adventure style challenge on page 31. Another of Ultimate's best games was Jet Pac — find out if that winning formula has survived the transfer from Spectrum to Vic-20 on page 29. Do you like war games or strategy games? Then turn to page 32 where you'll find our review of Stonkers, a tank game with a difference. We also look at the latest offering from new software company, Beyond. It's a maze style adventure for the Atari with some stunning opening graphics. But what about the game? Find out on page 31. Commodore 64 owners can check out Shamus — the game with the private eye theme — on page 32. And that's just for openers! Turn the page for a few more surprises.

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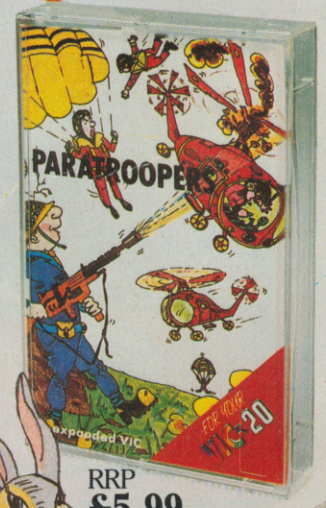

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CVG2-P

IMPRESSIVE ALL ACTION ADVENTURE

FOUR GATES

If you're after a good game for that Vic you got for Christmas then this is certainly worth a look.

Four Gates to Freedom is another in the Action/Adventure series from Phoenix software. The game comes on two separate cassettes with an arcade-type action game on one and an adventure on the other.

The catch is that you need a password to load the adventure, and you can only get this by reaching the highest level on the action game!

The action part of Four Gates is impressive. There is a wall at the top of the screen which is built in five-bar gate fashion. Above that is another wall, and beyond that are the four gates to freedom.

The idea is to break through both walls in Breakout style, avoiding aliens and also the falling debris from the wall.

Between the two walls lurks an extra meany, so the game gets harder after you've created a gap in the first barrier, as he escapes through the hole. He cannot be destroyed with your cannon.

The action in the game is very fast. If your trigger finger can handle it, you can fire quite a few times a second.

The graphics are not superb, but are adequate for the game.

Overall, it's great and very fast. But it may take some time, not to mention eye strain, to reach the highest level and get the password for the adventure.

Once you have the password — no I didn't finish the action but I've got friends at Phoenix — you can load the adventure.

When it has loaded and the password has been entered, the title screen welcomes you and challenges you to 'solve' the adventure! You'd think that they could check the spelling.

You start off outside a metal gate and your only exit is South. Problem is that you need a password to get through the exit, which I hadn't been given.

Not only do you get the loading code from the action game, you also get quite a few clues flashed on the screen during play. One of these, I assume, is the password to get through the gate.

If you'd like to try this for yourself, you'll need a Vic with a 16k Ram pack. Phoenix Software is based in Pinner — you'll pay £9.95 for the twin-pack, which can't be bad.

Getting started	8
Graphics	7
Playability	8
Value	10

PARALYSED BY PEPPER!

MR WIMPY

If you think that a game called Mr Wimpy must mean another version of Burgertime, then you're not wrong. But you're not exactly right, either.

The opening screen is original and quite good, but the remaining frames are just another version of Burgertime.

The first task in the game involves moving the ingredients from one side of the screen to another. You have to collect a tray and gather the cheese, ham and bun while avoiding Waldo the burger thief, and a group of flying manhole covers. No, I don't get it either!

Once you've gathered all the bits and pieces you get to the other screen, which is a pretty accurate copy of the Burgertime theme. The chef is replaced by Mr Wimpy, the logo used in their advertising. You are pursued by an egg, spoon and a sausage and you still have your supply of pepper.

The original Burgertime was written by Data East and was licensed for home use by Mattel, who produced a cartridge for the Intellivision.

The object is to build up the burgers at the bottom of the screen by walking over the ingredients so that they fall down a level.

If you pick up the ice cream or the cup of coffee then you get extra shakes of pepper, which is used to paralyse an enemy temporarily.

Burgertime is the same game, whatever you call it. But this is probably the best version around for the Spectrum.

It runs on a 48k machine and is available from Ocean Software for £5.90. It's a shame that they couldn't call it by its real name.

Getting started	8
Graphics	8
Value	8
Playability	7

CRACK SHOT CLONES!

CYBERTRON

Searching a derelict castle for treasures is brought up-to-date with this program.

Before entering each level of the castle, you are told which treasures you must look for and you then wander round the 16 rooms in search of them. As you pass over the treasure, it will appear at the bottom of the screen to remind you that it has been found.

Once you have all the loot, you then have to find the room with the safe in it. Touching the safe will lock away all the treasure and you are then moved up to the next level.

Obviously in such a game there will be enemies after your blood. On level one, says the inlay card, your only adversaries are the Spinners. Personally, I can't see what's wrong with them. (Did you see their Christmas show?) On higher levels, you are also pestered by Clones and Cyber droids. These have more person-seeking intelligence and can also fire pretty fast!

Control is via the keyboard or joystick, but the keys were not laid out too well. A and Z move up and down while "," and "." move left and right. The "M" key is used to fire, which I found to be too close to left and right. A joystick would have solved this problem. Furthermore, the break and escape keys are not disabled, as I managed to crash the program by pressing them.

Trying to re-run the program I typed OLD. I was amazed to find that my job was then made unnecessary, as the program reviewed itself. Up came the words "Bad Program"! To be fair, though, the game is quite well written. I enjoyed playing it, but I don't think that I'd come back to it too often.

Cybertron Mission runs on a BBC B and comes from Program Power. It'll cost you £7.95.

Getting Started	8
Graphics	8
Value	7
Playability	7

VICTORY FOR VIC VERSION

JETPAC

One of the best selling arcade game titles for the Spectrum has now been released for the Vic.

Jet Pac brought fame to Ultimate, a small company whose first release became an instant success and the Vic version is just as good.

As the person in charge of the Acme interstellar transport company, your job is to assemble your rocket and then to load enough fuel to let it take off. On reaching the next planet, you must fill up again. After four screens, you must rebuild the rocket.

The Spectrum version had 16 screens before they started to repeat but, the Vic game has just eight. Because Ultimate wants everyone to have an equal chance at finishing the game, the

continued on page 31

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CVG284

continued from page 29

Vic one runs slightly faster than the ZX.

The Vic will accept standard Atari-type joysticks, and these can be used in the game, although the keyboard can be used instead. What's more, the superb graphics of the Spectrum version have been captured in the same detail on the Commodore machine and the screen is one of the best that I have seen — all in 8K, too.

One talked-about problem from the Spectrum was the so-called bug in screen four. This, says Ultimate, was deliberate to allow poor players to achieve a high score. Anyway, that problem doesn't arise now, as that screen was one of those which was removed for the Vic. So it seems that Ultimate thinks Spectrum owners are more likely to be poor players than Vic owners!

A great game for one or two players, and well worth £5.50.

● Getting started	9
● Graphics	9
● Value	9
● Playability	9

FIGHTING FATAL FUNGUS

SS ACHILLES

You'll have to race against time to save your planet's most valued artifacts from the doomed star cruiser SS Achilles. The SS Achilles has been attacked by a strange space fungus which is slowly eating its way through the ship's maze of corridors.

The alien intruder is indestructible and your only hope of saving your culture's most treasured relics is to slow its progress through the ship, to give you enough time to escape through the shuttle craft with your cargo to earth.

The game starts by showing a very impressive graphic display of SS Achilles under which the game prompts the player to choose one of five difficulty levels, ranging from inept to expert.

You are placed inside an android protection suit to help you survive the harsh environmental conditions in the ship. Moving the droid into the walls or any grey object damages the robot's integrity level, shown at the bottom of the screen, together with the droid's remaining power supply. The level of the droid's integrity becomes more and more important as the game progresses and a lot of skill is needed to move the robot around the ship without hitting the walls or running into the fungus.

The growth of the fungus can be viewed by stepping into one of the tele-screens scattered around Achilles. This prints up a map of the ship's interior, showing the areas inhabited by the alien in orange.

To complete the game, you must pick up all the objects lying around the ship and deposit them in the shuttles loading bay. There are four different types, but the droid can only carry one particular object at a time. If and when you've collected all the objects, you can abandon the ship in the escape shuttle.

SS Achilles is a very addictive and challenging game. The graphics are good and the animation is amongst the best I have seen on the Atari. My only criticism of SS Achilles is that the game is only available on disc.

SS Achilles is available from Beyond Software for the Atari 400/800 and costs £19.95.

● Getting Started	8
● Graphics	8
● Value	6
● Playability	8

ASTRAL PLAIN ACTION!

DEFENSE FORCE

It's all action on the Oric as you career through space with lasers blazing in an attempt to save the humans from an alien invasion.

Attack! The humans are being captured! A Vultura rapidly descends on its prey with the aim of carrying him off into space. Making a rapid about-turn, you fly back in the opposite direction and blast the alien to the four corners of the galaxy. Luckily the humanoid is unharmed and falls gently back to earth.

Shoot-em-up fans will love Defense Force — with only a few variations, it's a faithful reproduction of the fast-moving, action-packed arcade hit Defender.

The aim of the game is to get through 20 waves of aliens and prevent the humans from being kidnapped. With up to 16 different video nasties on your tail, life becomes pretty hectic and you'll find that being able to fly both backwards and forwards a useful addition to the game.

Once all the humans have been captured, you enter the Astral Plain and beset with vicious nasties, your only chance of survival is to fight it out. Graphically very impressive, the Astral Plain gives the impression of flying into the depths of space away from the TV.

With the aid of a Star Map, it's possible to spot the swarms of aliens approaching before they've appeared on screen — so be prepared for waves of Assassins, Quantums and the dreaded Cybotroids if you don't want to lose a life. However if the pace becomes too much, a force field can be erected which will remain operational for six seconds — enough time to fly out of trouble!

There is an on/off sound function which I found especially useful — for although the sound effects are great, they are really noisy and had me clapping my hands to my ears in horror. Thankfully it's possible to play a silent game with just as much fun. A beginners' option is also available for the absolute learner, but this soon becomes boring.

With its excellent graphics, Defense Force will bring hours of fun to the lives of trigger-happy arcade fans who want a fast game for their Oric.

Defense Force is available from Cambridge-based Tansoft and costs £7.95.

● Getting Started	7
● Graphics	8
● Value	8
● Playability	9

YOU'LL BE HAUNTED BY ATIC!

ATIC ATAC

Abandoned in the eerie, haunted castle you can only escape by finding the Golden Key.

The castle consists of a large number of rooms, each of which has between one and three doors. As you walk across a room and through a door, the screen clears and the new location is drawn. The program runs very fast and there is no delay while the redrawing takes place.

The quality of the graphics in this game is the best I've seen from a Spectrum. Ultimate has dispensed with some of the movement and sound routines which were shared by Jet Pac and Cookie, and have written some excellent replacements.

Movement is smooth, and user defined graphics are used to their limit to produce some amazing characters such as evil-looking witches complete with broomstick.

Control is via Kempston or AGF joysticks, or the four cursor keys. With four keys for direction, one to fire and one to pick up the objects, a joystick is really the only way to play.

As I said, the idea is to explore the rooms, collecting the objects and using them. For example, some doors may be locked and to open them you'll have to find the correct colour-coded key.

Scores are printed on a beautifully designed "parchment" scroll which runs down

continued on page 32

continued from page 31

the right hand side of the screen. This shows the number of lives left, and also a large stuffed turkey! If you come into contact with any of the nasties, the turkey sheds some of its meat and gradually turns to a pile of bones. When all the meat's gone, you lose a life! Now that's novel.

Apart from the keyboard control, Atic Atac must rate as the best yet from Ultimate. It runs on a 48k Spectrum and is well worth the £5.50 which you'll have to pay.

Getting started	9
Graphics	10
Value	9
Playability	8

WARSHIPS OF GOR

ACHERON'S RAGE

If you're a fan of Asteroids then you'll probably like this version of the game for the Oric.

You've hyperspaced, says the cassette inlay, into a sector where scanners revealed no sentient life-forms. Suddenly . . . warships of the Gor are materialising all around you. In reality, though, it's an asteroids-type game.

The playing area consists of the whole screen, apart from a thin border and also a large shaded block in the middle. On the screen is your ship and a number of aliens, or Gor ships as Softek likes to call them. The idea is to destroy all of the Gor ships and then to move on to the next level. The block in the middle of the screen makes manoeuvring quite difficult, though.

There are three types of Gor ships. Some will try to ram you, some have the power to fire back, while others will lay mines. Running over one of these will result in your destruction.

There are four skill levels in the game. Even on level one I thought that the playing area was too small — there's just not enough room with all those aliens to manoeuvre your ship. You get three lives to start, and an extra one after clearing every six waves.

Control of the game is via the keyboard. There are five main controls — to rotate in two directions, fire, accelerate and brake — but you can't move and fire at the same time so a joystick option would be useful.

This is certainly not the best game that I've seen for the Oric, although the graphics are quite good in places. The Gor ships move very smoothly and flap their wings, but the player's ship rotates badly in large steps.

Sound effects are included, but are quite limited. There's one sound for firing and another for when the player's ship is destroyed. It's quite loud and there's no volume control, but you can turn it off completely if you want.

If you like this sort of game, then this is worth the money, but it's not one that I'd come back to very often. Acheron's Rage runs on a 48k Oric and costs £6.95.

Getting Started	9
Graphics	7
Value	7
Playability	6

BOUNCING POLICEMEN?

DAREDEVIL DENNIS

Dennis the Menace, the famous movie stuntman revs up his trials bike as he gets ready for the most difficult stunts of his short life.

Unfortunately for Daredevil Dennis, the film director won't tolerate failure, so if he fails more than three times at any stunt he's fired — which is probably just as well as poor old Dennis lands on his head each time he falls off and is probably suffering from severe brain damage!

There are six screens altogether. Dennis starts off by leaping houses and trees on the first screen and moves quickly onto water where he rides a wet-bike. The snow slopes are next — slightly more difficult as they are very slippery — with the remaining three featuring low-flying helicopters and gaps in the road. Your jumps have to be well timed if you want to save Dennis from going up in flames.

The first three screens are easily mastered on the first difficulty level, while the remaining five levels range from Experienced to Ace where you'll really have to struggle to keep Dennis on his bike. I had several nasty encounters with bouncing policemen and decided to stay on the novice level!

A lively tune is played which livens up the dreary few minutes while the game is loading and the graphics are very detailed and colourful. However, I felt the game lacked that elusive addictive quality which would make it a winner.

The game is controlled by the shift key which acts as a throttle, the return key which acts as the brake and the space bar which is used for jumping — very simplistic controls and a game better suited to the younger age groups.

Daredevil Dennis is available from London-based Visions for the BBC Model B at £7.95.

Getting Started	8
Graphics	6
Value	4
Playability	4

WAYS TO WIN THE WAR!

STONKERS

Golly, chaps. Spiffing game, what? These Imagine chappies have really got it right this time.

Yes, it's the latest release from Imagine. In one giant leap for a software house, Eugene and Co. have released a war-type strategy game but have kept those pretty arcade type graphics. Those graphics are, in fact, well designed. But I don't think they really live up to Imagine's claim that they are as much as is technically possible on the machine. For my money I prefer Ultimate. Whoops, sorry!

Anyway, chaps, this is a war strategy game. There are no fast moving meanies to zap; instead you have to move your tanks and cannons to clever positions and make sure that you are near enough to the supply ship to get some cargo when it unloads.

If all this sounds very vague and I seem to give the impression that I couldn't get in to the game very far, then you're right. The whole idea is pretty complicated and I actually spent the best part of a whole day studying the instructions in front of a Spectrum. For all my gallant efforts, I succeeded in drowning my entire regiment in the sea.

When opposing forces meet, whether by clever deployment or by accident, they will engage in combat. There's a predetermined hierarchy of which battalions are more powerful than others. Your forces will change colour if they're engaged in combat.

During play, the screen shows the playing area on a small scale. There's a 2-character wide cursor which you can move to any point and then expand that 2-character piece to fill the whole screen. It's really quite impressive. Anything which happens to be moving will do so whether you happen to be there watching or not.

The object is to destroy the enemy positions and to occupy their HQ. But I feel that this is going to take someone a long time. If you're the sort of person who likes to be able to get straight into a game once it's loaded, then this is not for you.

However, if you're fed up with zapping everything in sight from Space Invaders to Mutant Telephones and man-eating toilets then this will be good value.

Stonkers is from Imagine and runs on a 48K Spectrum. It costs £5.50

Getting Started	8
Graphics	9
Value	8
Playability	5

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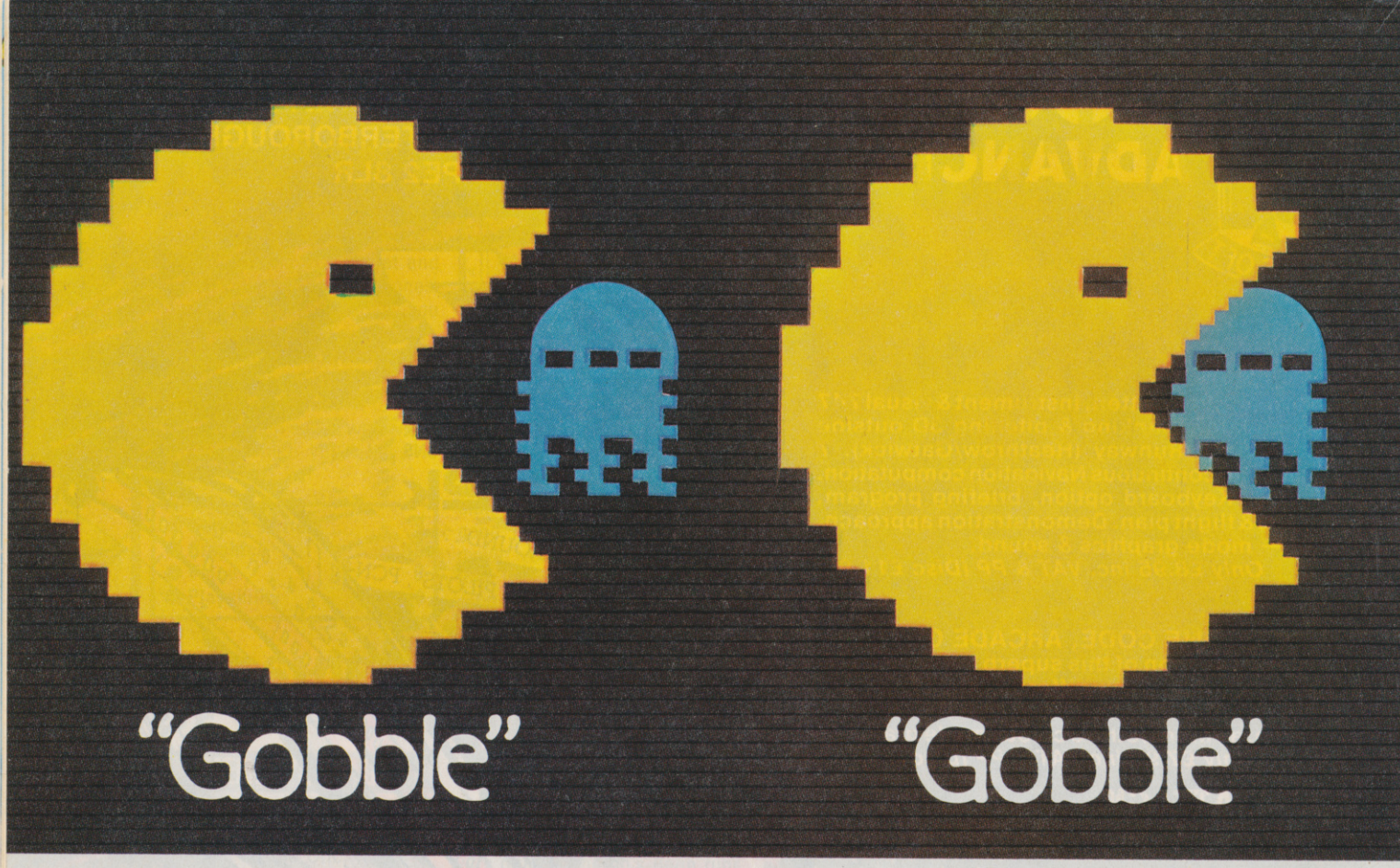

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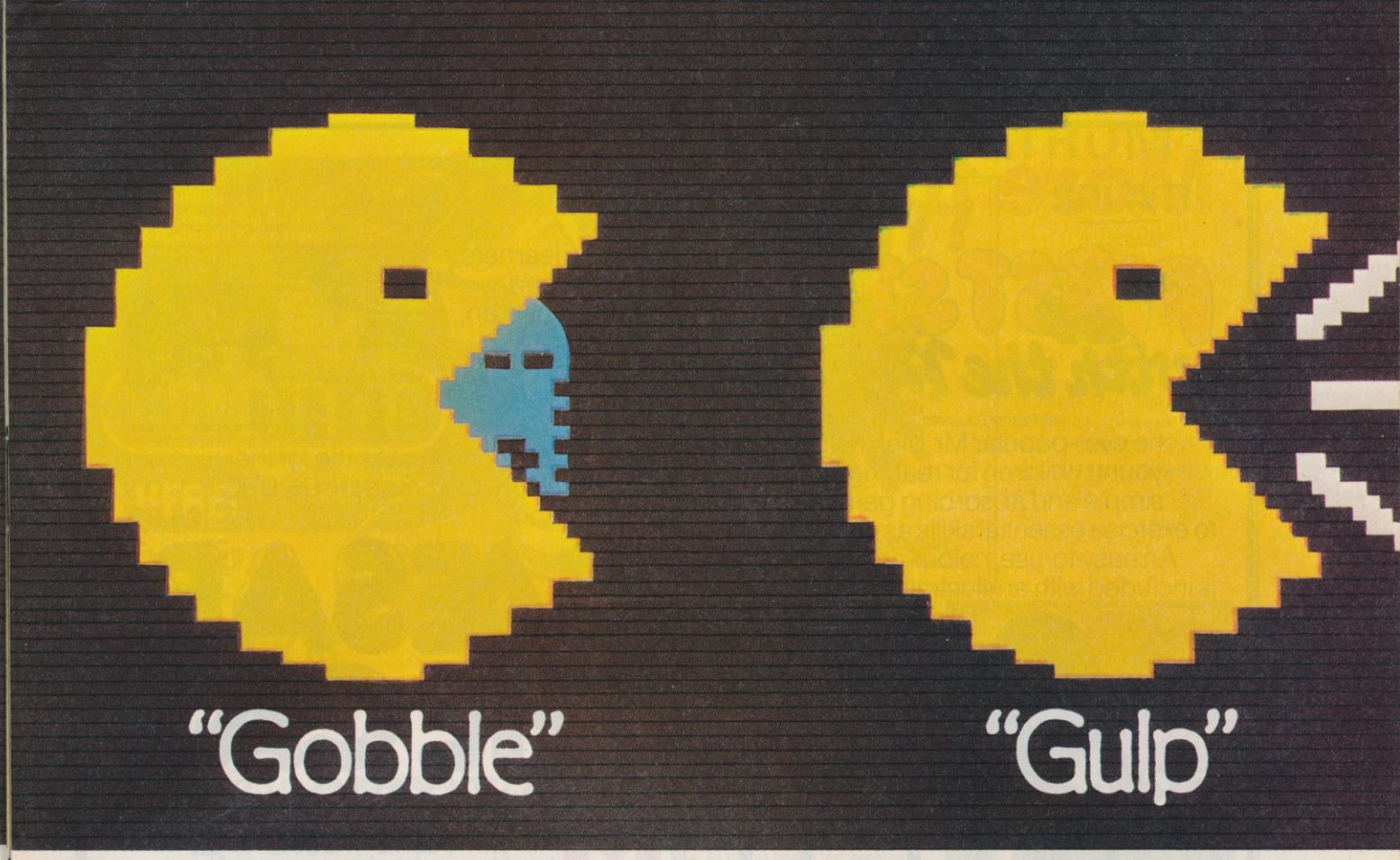

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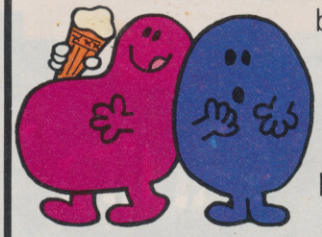

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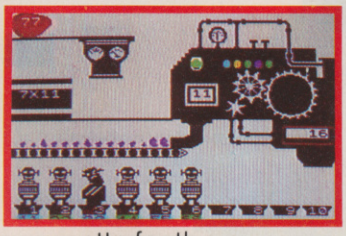

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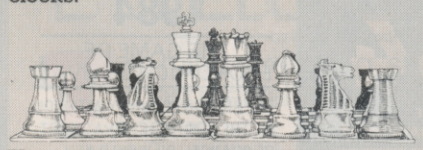
COMPUTER CHE

Thinking of buying a chess program for your micro? Don't know what to expect or which one to buy? Then read on . . . Whether you're a chess fanatic or you just know the rules, you will probably at some time want to set a chess program for your home computer. With the great number of programs now available, it may be a difficult decision to choose the best one for your micro. In this article Chess programmer Martin Bryant looks at the standard of play and the features you can expect from the best modern home computer chess programs.

Standard of play

The very best programs can now play at a fairly good club level, from around 1600 to 1800 ELO (125 to 150 BCF). The standard of play can vary greatly from game to game depending on the type of position encountered and the stage of the game. Modern programs also usually have a much fuller understanding of the more obscure rules of chess such as underpromotions, draws by repetition, draws by the fifty move rule and chess clocks.



Features

Here's what you should look for in a good chess program. The most recent programs are provided with many more features of a much higher quality than their older counterparts, such as:

● Move entry by a cursor positioning method. Why should people have to turn their thoughts into an algebraic form, just because its easier for the program to understand? The cursor method allows you to 'move' the piece on the board, more like a real chess game. The best programs can accept both methods.

● The ability to step backwards or forwards through the entire game. Older programs would allow you to take back only a couple of moves, but with new techniques the whole game record can be stored and scanned with small memory overhead.

● The oreintation of the board should be reversible. That is the board should be displayable with white or black at the bottom of the screen. This allows you to play black "up" the board, like a real chess game, instead of having to reverse your way of looking at it.

Several "modes" of play can add a great deal of flexibility to a program. The old fashioned eight "levels" can be vastly improved upon these days. Some of the sensible "modes" are:

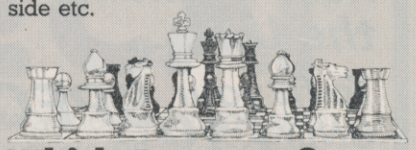
(i) "Tournament" mode: Full tournament parameters can be set up, to make the program play within any specified time limit. An easy to use version of the full mode is helpful as well, where you can just specify the average move time you wish the program to take. This can range from one second to 99 hours, effectively providing thousands of "levels". The program automatically adjusts its "lookahead", to play within the required time.

(ii) "All the moves" mode: Chess clocks are used, where you must play all the moves of the game within a specified game time. If you play too slowly, you lose on time! Club players often use this method in "five-minute" games where both players have five minutes each to play all their moves.

(iii) 'Problem" mode: The ability to solve chess problems of the type in many newspapers is good. Beware however of the programs which claim they can solve mates in five or more, but then take a week or so to do it! If the program averages more than a few seconds on any mate in two it is likely to be horribly slow on deeper mates.

(iv) "Losing" and "Equal" modes: Many players can't beat the programs on their lowest settings. These modes allow the program to quite deliberately try not to win! Instead it either tries to gradually lose or stay roughly level. These modes can be of enormous help to the beginner or very weak player. As the player improves, the program magically improves with him, always challenging him, but not totally smashing him so he just gives up.

The ability to quickly and easily set up different positions is essential. The program should also check that you don't try to play on with an illegal board position. For example, having P's on the first rank, more than one king for each side etc.



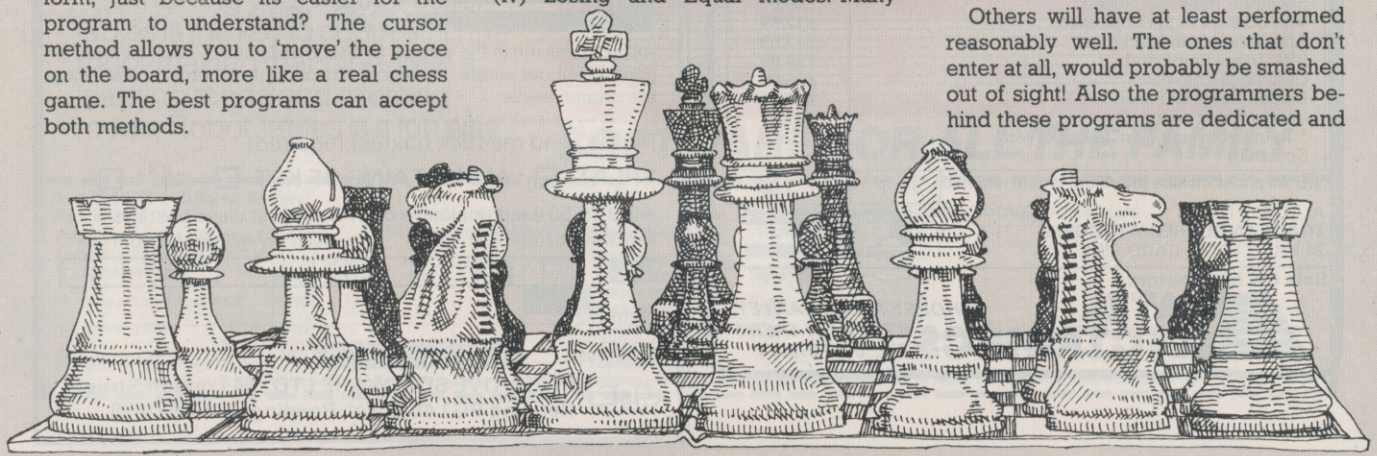
Which Program?

The best programs for playing strength are usually the most recently released. Any program which has been around for over a year without an update, is probably totally outdated as far as its playing strength goes. A year is a long time in computer chess, as can be seen from the results of programs which compete in recognised tournaments, such as the European Championships at the *PCW* show each year.

A chess programmer may achieve glory one year, but has to work very hard on new ideas/techniques to improve the program, so as not to be leapfrogged by other programs by the following year.

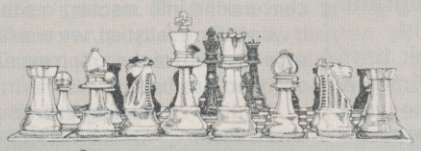
You should try to go for recognised quality programs, which have competed in many tournaments. There are several reasons for this. Some of the programs have obviously proved themselves by actually winning some of these tournaments.

Others will have at least performed reasonably well. The ones that don't enter at all, would probably be smashed out of sight! Also the programmers behind these programs are dedicated and



EQUE-MATES . . .

knowledgeable enough to really write a quality program, rather than just another software "rip-off" as are many chess programs. The same arguments really apply to the features as well. A "real" chess program will have most of the best features as a matter of course.



Reviews

I'll now take a brief look at two programs which are probably the best available. They are White-Knight Mark II for the BBC Micro and Cyrus I.S. Chess for the Spectrum.

Cyrus was originally written in 1981 by Richard Lang and won the European Championships in the same year. It has competed in several tournaments since, with varying success and has been adapted for several micros.

The Spectrum model is not the latest version of the program, but can still beat almost all other programs. It comes in 16k and 48k versions. The 48k version has more features and also uses an openings book. It contains a wide range of features, including set-up position, saving to tape, printer output and full game take-back. The bottom of the screen shows the various features available as single letter commands.

The display is clear and the programs cursor move entry easy to use. It allows user underpromotions, understands draws by the fifty move rule and some draws by repetition. It has eight levels and can solve problems up to three moves ahead.

White-Knight was originally written in 1977. Mark II won the home computer section of the European Championships in 1983. It is certainly the strongest home computer program available at the moment.

It runs on the BBC model B and like Cyrus, comes with several excellent features, including set up position, whole game takeback/replay, orientation, play-self, blindfold and even volume control.

When it computes its move, it displays the best line it has found so far in its search. This can be used to provide a "hint" move as well as an indication as to what "White-Knight has "seen". Again the display is very clear and the program easy to use. You can use cursor positioning move entry or algebraic notation.

The program can easily be set to play within any average move time you require of it, thus providing thousands of potential "levels". It can also solve mates up to five moves ahead. Its problem solving speed is phenomenal. It examines around 1,200 positions each second and when compared to the Program Power chess program was found to be around 200 (yes, two hundred) times as fast!

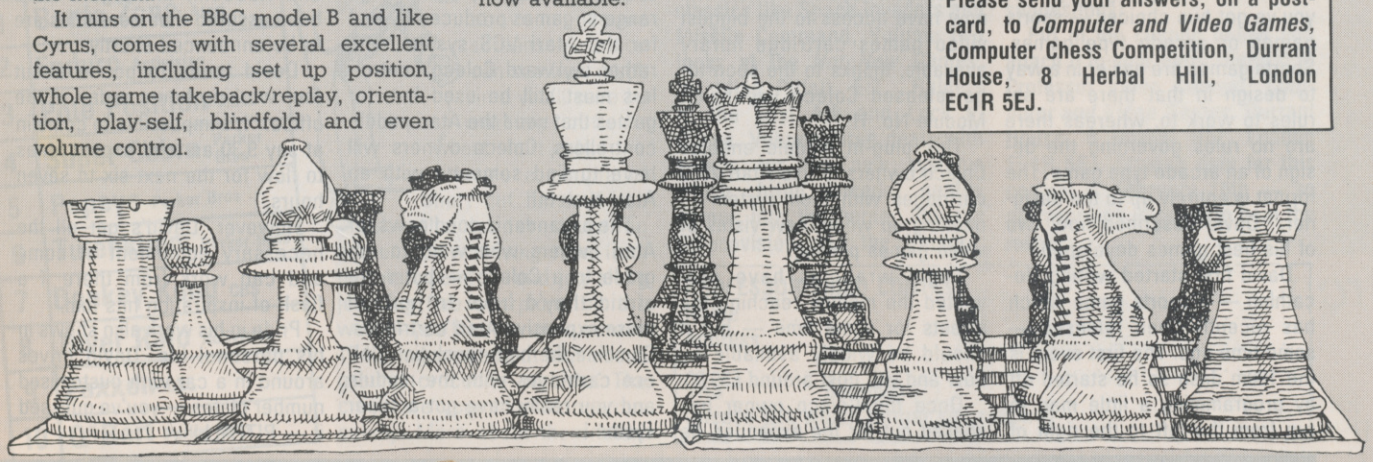
It was recently used in a study of several hundred chess problems and found that a dozen of the original problems were in fact in error!

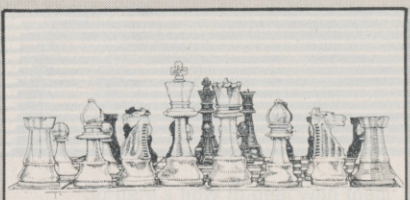
In a series of sixteen test games between the two programs on various levels, White-Knight beat Cyrus I.S. Chess by twelve games to four.

For other micros there is a wide range from fairly good to appalling programs. Cyrus is also available on the Dragon. Not as good as the Spectrum version but still a good buy. White-Knight is soon to be released on the Electron.

The Atari cartridge I tried was horrible and at £25 has got to be one to miss. For the Commodore 64 comes the Grand-Master. It didn't offer many real features and I beat it twice with no real trouble and wasn't very impressed. At £15 I would also give it a a miss.

A new program called Collosus, which won second amateur prize at the European Championships is soon to be released on the CBM 64 and Atari micros. This program promises to be one of the best around. For the Apple, Sargon 2 has had its day, but Sargon 3 is now available.





COMPUTER CHESS COMPETITION

BBC Publishers are offering a super prize to the lucky winners of our Computer Class Competition — three presentation copies of White-Knight, autographed by the author.

All you have to do is answer the following questions about computer chess. So have a go at winning yourself one of the best chess programs around!

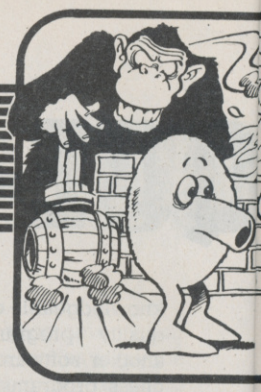
(1) What was the name of the computer chess program which won the first Computer World Chess Championships in 1974? Was it:
(a) CHAOS (b) KAISSA (c) CHESS 4.0 or (d) OSTRICH?
(2) What processor did the original Cyrus program run on?

(3) Which program won the 1982 European Micro-Computer Chess Championships?

(4) The fastest chess program in the world, called BELLE, uses special hardware to achieve its phenomenal speed. Approximately how many positions per second can BELLE examine? Is it (a) 500 (b) 8,000 (c) 75,000 (d) 160,000 (e) 470,000 or (f) 2,000,000?

(5) Describe a new feature which you would like to see included in the next generation of chess programs.

You'll probably have to be a professional chess programmer to answer all these questions, but the competition isn't open to them. Just answer as many as you can. In the event of a tie, the answers to question five will be used to decide the winner. Closing date for entries is February 16th and the usual *C&VG* competition rules apply. Please send your answers, on a postcard, to *Computer and Video Games*, Computer Chess Competition, Durrant House, 8 Herbal Hill, London EC1R 5EJ.



MEET THE VIDEO GAME SUPERSTAR

David Crane, a 29 year-old, 6'5" giant is one of the leading lights behind Activision's success in the highly competitive video games industry.

Activision, which was formed about four years ago, owes its outstanding success to the programming prowess of games designers like David.

During a flying visit to the UK, David took time out from his busy schedule to let *Computer & Video Games* writer Clare Edgeley into the secrets of games programming and his own particular brand of success.

Activision, one of America's youngest video game success stories, first made its mark on the industry four years ago with games like Dragster and Fishing Derby. Since then there has been no holding them back and Activision have created a string of popular titles which have won them a place among the frontrunners in this highly competitive field.

I met David at one of London's top hotels, where he was happily tucking into a take-away lunch of some rather soggy looking hamburgers and chips. He explained this away by stating a preference for hamburgers rather than English food! Perhaps it made him feel a little less homesick!

David first became interested in video games as a teenager when he visited arcades to play Pinball, but he added: "I soon realised that my interests lay in electronics and computing" About eight years ago he started to program his own games in an attempt to forge a career in the industry.

Since then David has produced many games for Activision and has certainly made his mark.

One game which earned him instant recognition as a top performer was Pitfall, which was voted 1983's Best Game of the Year in the States. In fact you could say that Pitfall made David Crane a video-game superstar.

The secret of a good game should combine realistic graphics with instant playability, a level of addictiveness and make full use of the machine's capabilities.

"When designing a game, you've got two choices — sports games or arcade type games. Sports games are easier in a way to design in that there are set rules to work to, whereas there are no rules governing the design of an arcade type game. The format is entirely up to the designer." David described how two of his best games developed.

David first started writing Decathlon — a sports game which has recently been released — some time ago. The first event is the 100m dash so he started off by programming a little man to run from the left to the right of the screen, the screen then scrolls forwards showing the athlete still running to reach his goal.

Unfortunately, Decathlon originally had to be shelved, as David couldn't fit all ten events into the memory space available to him at that time.

Turning to the idea of an arcade game, he decided to start in exactly the same way as Decathlon — a little man running from one side of the screen to the other. And so the idea for Pitfall was conceived.

"I didn't have a preconceived idea of how Pitfall would turn out, I just added objects off the top of my head like pits, vines, ladders leading into the pits and the odd scorpion until I ran out of memory.

"Pitfall was a difficult game to design as I tried to add a level of complexity to every step."

After completing Pitfall, a way was found to double the program size for Activision cartridges and David was able to complete Decathlon — an Olympian feat of programming in which you've got to compete in screen versions of all ten events of the real life Decathlon.

Unlike other video games companies who employ a team of programmers to work on one game, Activision give each programmer sole responsibility for one game, from the initial concept of the idea through to the final product.

A team of five to six designers work in one room in an atmosphere which David finds very "supportive". In this creative atmosphere there is an "instant feedback and recognition in the quality of a game and a constant exchange of ideas."

The programming time for each game is somewhere between six months to a year. Typically, Pitfall took some 500-700 programming hours to complete over a period of six to seven months, while Decathlon was completed in just over a year.

However, games used to take longer to develop due to the graphics. "Originally we started off by plotting characters and objects in coloured squares on graph paper and then doing the conversions into machine code. If we weren't satisfied, we would have to return to the graph paper and start again."

This time-consuming exercise was solved by David who developed a gadget which enables the programmers to draw straight onto the screen at four times the real size. Once the programmer is satisfied with the finished product, it is automatically converted into machine code and stored in the memory. "It's approximately 80% faster using this method."

One of the passwords to the programmers' success are the key words: program size, execution time and storage memory. "When programming, you have to trade within these three constraints." For instance, if the programmer needs more memory, then either the program size or execution time will have to be cut down.

Activision have recently moved into the home computer market with River Raid and Kaboom for the Atari 400/800. I asked David about Activision's plans for the future. "Four years ago, our plan was to make a quality name in video games and once that name was established — to move with the industry. We are following a very well thought out plan."

David wasn't giving any secrets away and wouldn't say what was to follow River Raid and Kaboom, although I have been assured that more titles are to be announced shortly.

David tends to put in about four working hours a day at the office. "It's impossible to come in at say 9.30 am and expect ideas to flow for the next six to seven hours."

However, David's got all the necessary equipment at home and can work from there if a flash of inspiration hits him.

Pride in his work also shows in his personal life. David drives around in a car with customised number plates — you've guessed it — PITFALL!

EXPANDING COLECOVISION

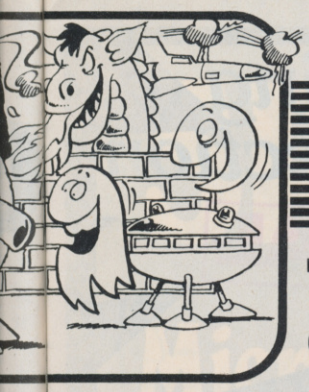
ColecoVision system owners will now have access to the biggest video games cartridge library available, thanks to the soon-to-be-released Coleco Expansion Module No. 1!

This plug-in module enables Coleco owners to use Atari 2600 cartridges with their system — opening up whole new vistas of video games playing.

Legal wrangles have prevented the module reaching the streets for some time — but it should be widely available by now and will cost around £59.00.

Once the Coleco owner has shelled out for the expander, he or she can use any of the large range of games produced by and for the Atari VCS system. The rather awkward Coleco controllers must still be used but, for games that need the Atari paddle controllers, Coleco owners will have to find someone with an Atari system!

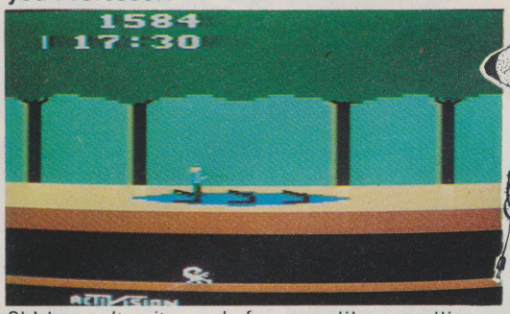
The expander is good news for Atari owners who want to upgrade to a Coleco — but were afraid they'd have to junk all those expensive Atari cartridges. Combine the high-resolution Coleco cartridges with the module and you really have got a super system!

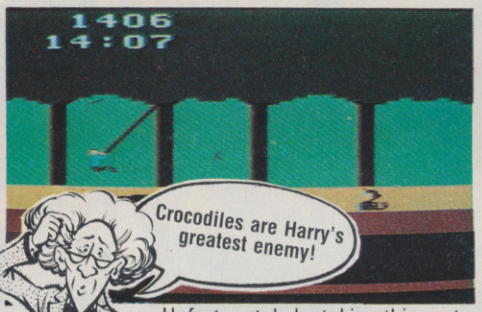


GAMING

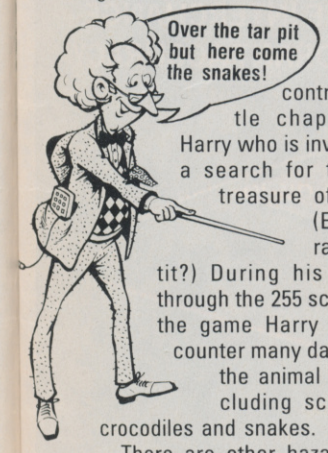
THE VIDEO PROFESSOR GOES ON PITFALL SAFARI

Welcome to the second of Professor Video's lectures, packed with useful hints, tips and strategies which help you beat the hot home video games. This time he's taking a look at the ever popular Pitfall, written by David Crane, Activision's ace designer — who we interview elsewhere on these pages. Over to you Professor!





Oh! I wasn't quite ready for you. Sorry! Right, it's Pitfall isn't it. Yes. Pitfall . . . now let me get my notes together. Ah yes! Here we go.

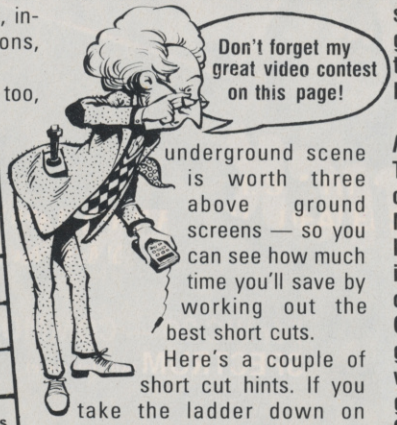


In Pitfall you control a little chap called Harry who is involved in a search for the lost treasure of Enarc. (Enarc/Crane, get-tit?) During his search through the 255 screens of the game Harry will encounter many dangers of the animal kind, including scorpions, crocodiles and snakes.

There are other hazards too, like rolling logs, forest fires, jungle lakes and the dreaded tar pits! Some of the lakes and pools disappear and reappear mysteriously just when poor old Harry least expects it!

Harry has just 20 minutes to find the 32 lost treasures of Enarc — and only three precious lives.

The key to winning at Pitfall is knowing how to use the underground passageways which are hidden under the jungle. Some of these passageways are dead ends — but others provide useful short cuts to the treasure. One underground scene is worth three above ground screens — so you can see how much time you'll save by working out the best short cuts.



Here's a couple of short cut hints. If you take the ladder down on screen 15 — moving right from the start point — and jog along jumping five scorpions on the way — you'll come up in screen 19 having missed out four above ground crocodile screens. The crocs are your most dangerous enemy. More about them later!

TOP TEN	
1	Battle Zone Atari
2	Enduro Activision
3	Pole Position Atari
4	Super Cobra Parker Bros
5	Popeye Parker Bros
6	Tutenkham Parker Bros
7	Donkey Kong CBS
8	River Raid Activision
9	Zaxxon CBS
10	Q*Bert Parker Bros

So here's how to deal with them when you are faced with a screen which doesn't offer you the option of grabbing a vine and swinging over their gaping jaws. There are three of the reptiles in each screen.

Timing is all important. Wait until the first crocodile's jaws clamp snap shut then jump Harry onto his snout, quickly moving him to a spot behind the beast's jaws.

Now the crocs will open their jaws again displaying a fine set of sharp white teeth. But don't panic. Wait until their jaws close again and jump onto the second crocodile — repeating the quick step to behind his jaws. The third croc is dealt with in the same manner — but jump off quick and run to the next screen.

You can move left or right from Harry's start point. Moving right you come across more treasures earlier in the game. But by running left the rolling logs don't pose a hazard you can run along with them in the same direction.

Unfortunately by taking this route you miss out a gold bar. But when you learn that you'll discover six different treasures between screens 41-57, this strategy doesn't seem quite so bad after all! Another shortcut starts in screen 13 — again moving right from the start — this will take you to screen 19 — again avoiding a screenful of crocs!

Those crocodiles will perhaps prove to be your deadliest foe.

TRY GETTING IT TAPED!

Hello! This is Professor Video calling! Last issue I began my lectures in the art of video-gaming, bringing you tips to help you take on any sort of alien!

I've managed to get hold of five sets of new video releases called *How to Beat Home Video Games*, produced by Polygram Video. Each set consists of three tapes which deal in depth with strategies to beat games and give those cunning hints and tips to make your scores higher and higher.

Volume one of *How to Beat Home Video Games* deals with The Best Games home video classics like Space Invaders and Missile Command, Volume two looks at the *Hot New Games*, including Pitfall, E.T., Raiders of the Lost Ark and Lock n' Chase. Volume three deals with games for the new systems which bring arcade quality games into the home, like the Colecovision and the Vectrex.

After you've watched each of these hour long tapes you'll be able to pick up your joystick and play with the confidence of a video-grandmaster!

So, how do you get your hands on a set of these great tapes? It's as easy as this — just send me your favourite points-winning tips for your favourite video game. I'll pick out the top five tipsters and they will each receive a set of the tapes! Describe the strategies or sneaky moves that beat giant gorillas, defeat alien invaders or save Pacmen from the grasp of ghosts! And that's just a few suggestions!

Fill in the coupon below and attach it to your entry. Send it to Professor Video Contest, *Computer and Video Games*, Durrant House, 8 Herbal Hill, London EC1R 5EJ. Closing date for this contest is February 16th — so get your tips in quick to beat the rush!

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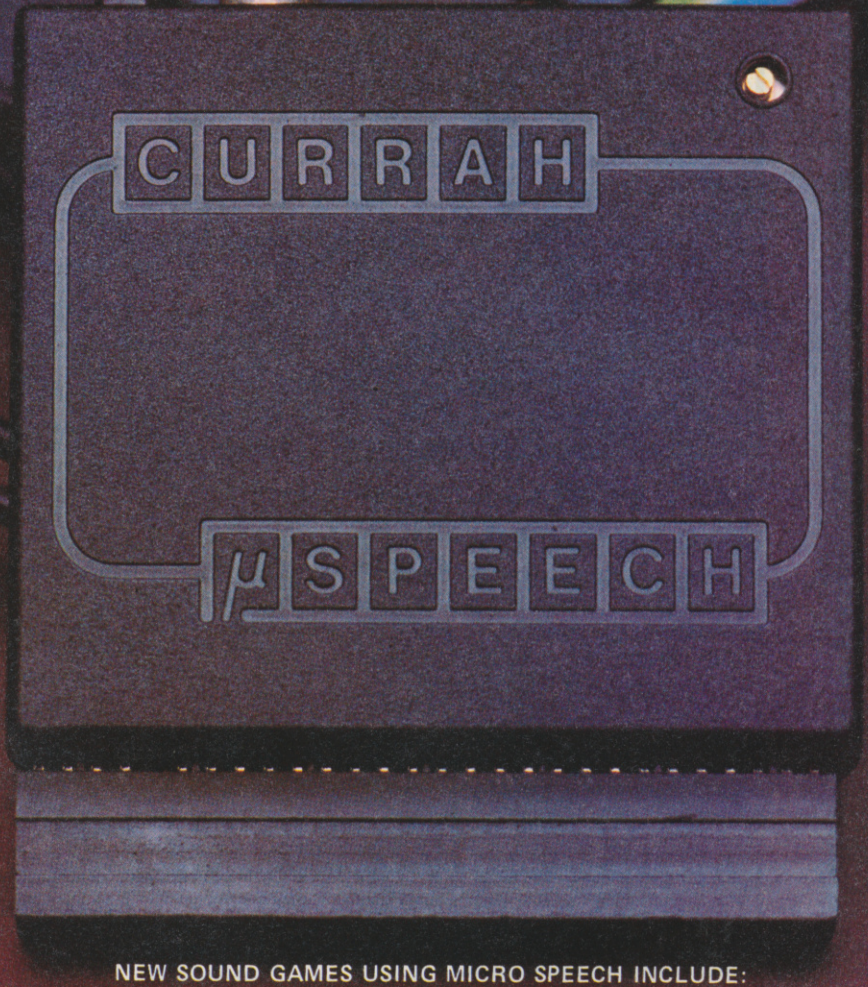

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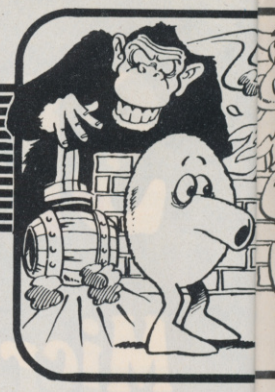
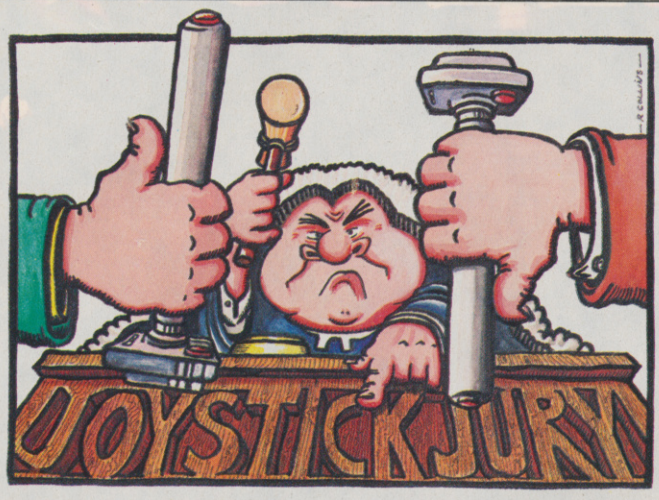




TEST FOR SPACE ACES

If you fancy yourself as a real space ace then Gorf will give you the rank you truly deserve.

This home conversion of Bally's arcade game offers four separate shoot 'em up challenges and then awards a rank depending on your performance.

The first wave is Space Invaders with the addition of a force field. You have to blast gaps in the crescent shaped force field to enable you to pick off the Invaders as they advance down screen.

Stage Two is called Laser Attack and introduces a particularly vicious formation of aliens who buzz around the screen shooting long snaking beams of laser fire.

Laser Attack will have you wrenching and pulling on your joystick but tougher things still lie ahead in Space Warp.

In this level the aliens spiral out towards you corkscrew fashion. As they approach they get larger and will collide with your ship unless you can get them in your sights and blast them.

The fourth and final challenge is the Flag Ship. This is the Gorf's home base moving back and forth across the top of the screen. The force field is back in position so you will have to shoot a clearing in this and then make several direct hits on the ship before finishing it off.

Your mission is now complete and you receive your rank. I managed to attain the rank of Space Colonel — which wasn't bad considering I started out in life as a lowly Space Cadet.

If you think Gorf may enable you to become a hero overnight then forget it, because each time you complete one mission you get given a new, tougher one!

To attain really high rank you will have to do battle with faster, more numerous aliens with heavier fire power. Another cloning of a well known arcade game. Available now at £29.95 from Colecovision.

THE VERDICT

If you liked the arcade game you'll like the home version too.

- **Action**
- **Graphics**
- **Addiction**
- **Theme**

SMURF TO THE RESCUE

Smurf must be the "cutest" of all "cute" games! That little blue chap with the floppy white hat has even managed to overtake Pacman in the *C&VG* cuteometer ratings!

He first appeared on the Colecovision system — in search of Smurfette imprisoned by the evil Gargamel in a gloomy spider-filled castle. Now Smurf can continue his quest on the Atari VCS thanks to CBS Electronics! The Atari version follows faithfully in the footsteps of the Coleco original. Despite the limitations of Atari VCS graphics, the CBS conversion is remarkably good — particularly when it comes to skyscapes.

The Smurf still walks along a bit like a cross between John Wayne and Charlie Chaplin — which adds to his cuteness!

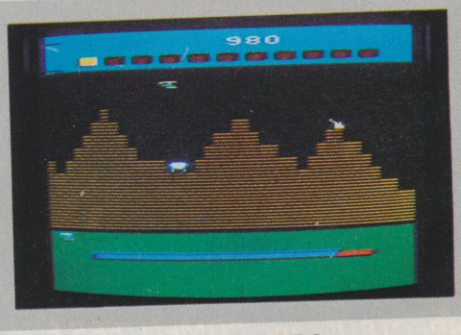
In case you've not seen the Coleco version, the object of Smurf is to rescue Smurfette from Gargamel the giant's castle. The Smurf has to trek across rough countryside, jump picket fences, leap over rivers and brave the dangers of Gargamel's dungeons before he can reach the giant's sitting room where Smurfette is imprisoned on a shelf high above a vast table.

The rivers and the final screen are the only features in the Atari version not found in the Coleco game.

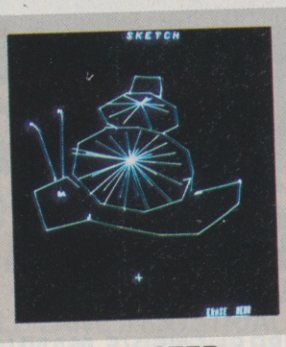
If you play on skill level one, the Smurf simply has to hop, skip and jump along to the final screen — avoiding the nasty spider in the dungeon screen — and rescue Smurfette.

If you go up to skill level two, then Gargamel's hawks, smakes and bats will be after you — making the game much more challenging. You have to duck and weave as the assorted nasties come at you!

GORF

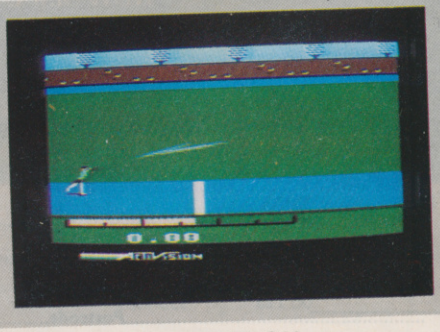


SUPER COBRA

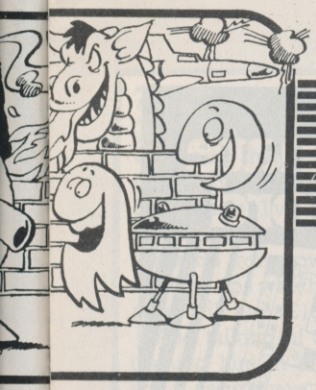


ART MASTER

SMURF



DECATHLON



GAMES

The final screen is quite difficult. Firstly you have to beware not to rush into it too quickly. If you do, your Smurf will walk right into a chain and you'll lose a life without even getting a crack at rescuing Smurfette. Unlike the Coleco original where you had to get your Smurf onto the top of a skull and then make a quick hop up to Smurfette, the Atari version adds a few extra hazards. You have to jump onto a chair, then onto the table, then another chair before finally being able to take that final leap onto Smurfette's shelf! All of which takes a bit of practice and good joystick control. If you play on skill level two, the castle bat will be attempting to thwart your rescue bid in this screen too!

The little character will soon win your heart — even though it does take a bit of time to master his leaps, hops and dodges. And CBS have obviously gone to a lot of trouble to ensure the VCS graphics match the Coleco's as closely as possible. Personally I liked this version better than the original — except it's still got that irritating little tune!

THE VERDICT

If you like cute games then Smurf is the ultimate in cuteness. But will the challenge last if you are a dedicated video player?

- **Action**
- **Graphics**
- **Addiction**
- **Theme**

MEET THE ART MASTER

Now for something completely different. Last month we complained that the range of games for the Vectrex lacked variety. Milton Bradley have responded to this criticism by submitting a game for the jury's scrutiny which is completely unique — not only for the Vectrex, but unique amongst all video games systems.

The Art Master cartridge enables you to become a video artist for an afternoon. Designed to work in conjunction with the Vectrex light pen, you can use Art Master to sketch, draw in dots and then connect them up, and even animate your drawings to create genuine cartoon animation.

The sketch function lets you enjoy the simple fun of doodling in light. You can copy pictures from books, write messages, or play noughts and crosses. The connect function lets you draw in dots. You can use this to create dot pictures and ask your friends to guess what they are before pressing the button to connect up the dots. Options are chosen by selecting choices from a menu using the light pen which you simply point at the function you require.

Although doodling in light is fun, the real attraction of this cartridge is the animate option. Although you cannot execute very sophisticated animation, you can do simple things like drawing a plant and making it grow, or make a stick man walk across the screen.

The Art Master cartridge comes complete with the light pen and an instruction booklet. In the shops now at around £30.00.

THE VERDICT

Adds a new dimension to your Vectrex.

- **Action**
- **Graphics**
- **Addiction**
- **Theme**

PURE GOLD DECATHLON

Decathlon is the most exhausting video game ever to come up before the jury! You should have seen them when they came out to present the verdict — the foreman could hardly stand up!

The reason for all this tiredness is due to an entirely new innovation in videogaming — the shake-speed joystick.

It's not a new joystick, but a new technique in David Crane's — of Pitfall fame — latest game — Decathlon.

You control an athlete taking part in the famous Olympic ten-event contest. To make your man run forward you have to move your stick as fast as you can from left to right. The faster you shake it, the faster he moves.

Speed is essential and not just to win the 100, 400, and 1500 metre races. You also need as much speed as you can muster to gain maximum height in the pole vault, high jump, and length in the long jump. Speed also enables you to gain momentum when throwing the javelin, discus, or putting the shot.

Your athlete has the advantage of a speedometer at the bottom of the screen, which measures his pace with a red "fuel level" style display. When he's at full pelt the line will shoot up to level six, and fall back to nil when stationary.

To jump or throw press the fire button. Some of the events are more fun than others — my personal favourites are the high jump and the hurdles.

This is a real winner of a game from Activision for the Atari VCS. Like the rest of the Activision games, if you get good enough at them you are rewarded. In Decathlon you can send off for a gold medal if you score over 10,000 points. Available now at £29.95.

THE VERDICT

This is your chance to go for gold. The most playable sports simulation for the VCS — for up to four players.

- **Action**
- **Graphics**
- **Addiction**
- **Theme**

SUPERCOBRA SUPER GAME

Scrolling games are pretty thin on the ground for the Intellivision, so the arrival of Parker's Super Cobra was greeted with considerable excitement by the ladies and gentlemen of Joystick Jury.

The Scramble-type game from Konami was a significant hit in the arcades despite being slightly over shadowed by Scramble.

Now the game has been licensed by Parker Brothers and converted for home use on the Intellivision.

Four levels of scrolling, bombing, shooting action have been incorporated in the game for one or two players.

Piloting your chopper through enemy terrain you are attacked by ground to air missiles, and bouncing bombs.

You'll need all the skill you can muster as the enemy barrage intensifies and the caverns and cityscape through which you must negotiate your chopper get narrower and narrower. Needless to say the Intel disc controller doesn't make this any easier.

After 7,000 miles a squadron of alien flying saucers attack you with missile fire. Fuel dumps are now few and far between so you can't afford to miss hitting them to boost your supplies each and every time they appear.

At the end of the caverns and city skyline are three enormous skyscrapers with the words Konami and Parker Brothers written on them.

You are now near the end of your long flight and have to bomb one last ground installation to complete your mission.

It will take the most skilled video ace several attempts to crack this one.

THE VERDICT

Another good game for Parker Brothers — filling a gap in this type of scrolling shoot 'em up for the Intellivision. Available now at £29.95.

- **Action**
- **Graphics**
- **Addiction**
- **Theme**

Next issue we're letting the members of our joystick jury loose on some hardware. Namely the joysticks themselves. We reckoned it was about time we took another look at the devices available to play games with — on home video game systems and home computers.

Our joystick jurors will be looking for the ultimate stick and at the same time will be bringing you up to date news of what's good in the world of sticks.

Also we'll be taking that look at laser-disc technology for the micro games player. That's using a few longer words to say what we promised you this month — but we just ran out of space this issue! We'll be taking a look into the future and predicting that you'll be able to play laser games on your home computer — games like the ones that are revolutionising the arcade industry right now!

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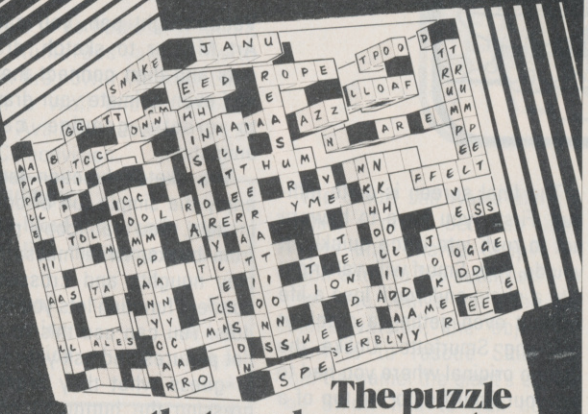

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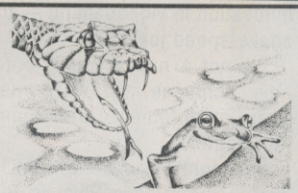

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TIPSTERS PAY RISE

On seeing that Seamus is paying £10 for hints and tips which reach his Program Extra page, I've been saving up especially, and can now afford to do the same. So from now on, any letters, hints or other tips which make the Bug Hunter page will earn £10 for their authors.

And talking of Seamus, I'm currently training him in the art of Bug Hunting and I assure you that he's very nice to talk to. So next time you have a problem and I'm off fighting the Bugs, ask for him.

Here at *C&VG* we've come up with a clever idea to keep calls evenly distributed between myself and Seamus. Next time you have a problem, toss a coin before you telephone the office. If it's heads, ask for me and if it's tails then ask for Seamus! And if it lands on its side, phone the *Guinness Book of Records*! Now, back to the serious stuff.

GO FASTER DRAGONS

Dragon users will probably be aware that some Dragons can be speeded up simply with a POKE. Not all machines will allow this. But now, courtesy of Bug Hunter Enterprises (with a little help from Ahlan Davison-Grey, our Dragon software reviewer), here's why, or why not.

The central chip in the Dragon is a 6809E, where the E means that the chip gets all its timing signals from an external clock. The clock takes the form of a crystal, and the frequencies it produces are handled by another chip.

However, you can alter some of the registers in this last chip to alter the speed of the clock which drives the 6809. This has the effect of speeding up the computer so that some games will run twice their normal speed.

However, the 6809 was not designed to run at this speed, so don't be disappointed if yours doesn't. But, says Ahlan, the fact that so many do, is a tribute to Motorola, the manufacturer.

There is certainly nothing wrong with a Dragon which will not run at the higher speed.

CHEQUERED FLAG — PSION

James Alston from Bromley, Kent, writes to tell me of what he thinks is a bug in Chequered Flag. At the end of a race, he says, the computer is supposed to print the fastest lap time. In fact it prints up the time taken to complete the last lap. Has anyone else found this problem?

SPECTRUM GRAPHICS

We still get calls from Spectrum owners who have tried running games from our magazine but all the graphics come out as lower case letters.

This is because the game uses user-defined graphics characters — that's what all those DATA lines are for.

The solution is simple. If, when typing a Spectrum program, you see a PRINT line with some lower case (small as opposed to CAPITAL) letters in speech marks, these are probably user-defined graphics and need to be entered in graphics mode.

To do this, type the line in as normal but when you get to the letters, enter graphics mode by typing CAPS-SHIFT with 9 to get a G cursor. Enter the characters and then get out of graphics mode by typing CAPS SHIFT with 9 again, and finish typing the line.

Write to me at Bug Hunter, Computer and Video Games, Durrant House, 8 Herbal Hill, London, EC1R 5EJ. Or phone me on 01-278-3881.

RABBIT RAID — SPECTRUM

If you managed to get the graphics correct in Rabbit Raid for the Spectrum from November's issue, then here's how to add some sound to it, courtesy of Ian Lewis from Lewes, East Sussex, who's the first to earn the new improved sum of £10 for his efforts.

On line 30 after RAIDd": and before GOSUB add BEEP .3,7: BEEP 1,.7:Beep .3,7 and at the end of line 330 add :BEEP .05,14.

Ian also suggests that a more realistic score system is made by changing line 250 from S=S+100 to S=S+250.

BY ROBERT SCHIFREEN

TIPS FOR THE ATARI

Here are a few useful tips for the Atari 400/600/800 from Christopher Roche of Sutton Coldfield.

To disable the break key, type POKE 16,64: POKE 53774,64. To disable the system reset button, try POKE 580,1. Now, if anyone presses it, the machine will erase all its memory including the program.

To destroy all variables try FOR X=PEEK(130)+256*PEEK(131) TO PEEK(132)+256*PEEK(133):
POKE X,0:NEXT X.

After entering this, when LIST is typed the program will be listed in an unreadable form.

Also for Atari owners who keep having occasional errors with the 410 cassette recorder, try typing LPRINT before CSAVEing. This will produce a harmless error message, but just continue as normal. Thanks go to Donald Dods from West Lothian for this.

WILD WEST — VIC 20

Vic 20 owners may have been surprised by the Wild West program from December's issue. Even though the program needed a super expander cartridge, there were still three commands in there that the machine did not understand. The problem stemmed from the fact that we haven't saved up enough for a Vic printer yet, so I loaded it into our Pet to be listed.

However, because you can't get a super expander for a Pet, some of the tokens from the cassette were misinterpreted. I can now put you out of your anguish by revealing that BACKUP should be COLOUR, APPEND should really be SOUND while SYNTAX should actually read RJOY. You will now be able to get the game running perfectly.

I am still getting letters about bugs in professional software for micros. With Christmas just gone, there must be quite a few micro owners who have bought software with bugs in it.

The latest batch comes from Peter Lee of Ilford, Essex. Peter talks about problems with Psion's Flight Simulation, Ocean's Kong and has also told me of a problem in Valhalla which causes the program to return you to BASIC, able to LIST the game!

Well, that's it for another month. Don't forget that you can always talk to me about your computer problems on 01-278 3881. I've just had one of those posh answering machines fitted to the bug phone so if you are suddenly struck by a bug in the middle of the night or at the weekend you can leave me a message. You may also find that the machine is on during the day if I'm tied up with the dreaded Seventh Empire — someone has to type all your moves into the computer! — but leave me a message and I'll call you back.

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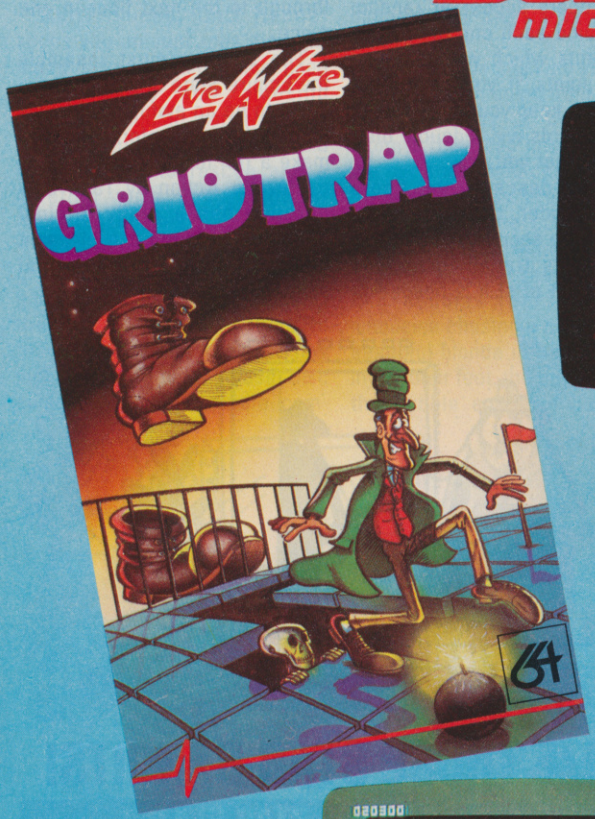

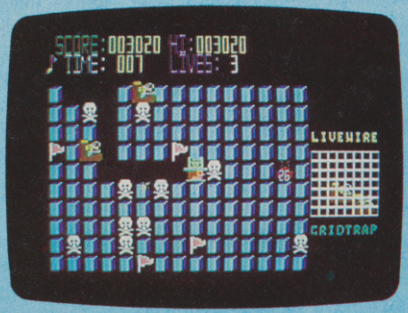

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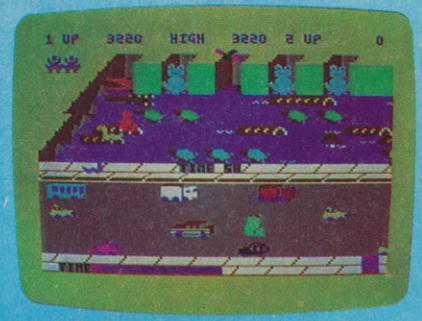

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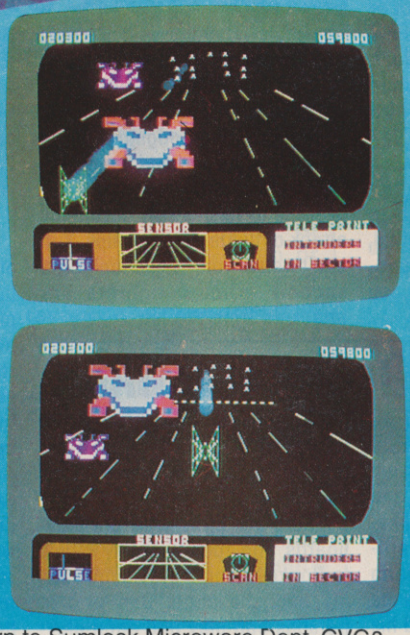

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ARCADE ACTION

HOLD ON — GOING DOWN, DOWN, DOWN . . .!

The latest convert from video to pinball is that master of arcade abuse Q*Bert. Gottlieb have transferred the little chap from video-screen to pinball playfield in Q*Bert's Quest. And all Mr Q's mates have come along too. Coily, Ugg and Wrongway are still out to make life difficult for Q*Bert as he attempts to build his pyramid of coloured cubes.

By hitting one target — the monster's den — you'll release an extra ball, but the monsters escape too to cause Q*Bert more problems.

This machine has one irritating feature — the ball tends to stick around the upper chicane section of the playfield, hesitating at entrances to passageways — and this upsets the rhythm of play which generally is fast and furious.

For soccer fans Gottlieb offers Striker — the player takes on the pinball machine's team clad in yellow. The player gets the white strip! There are, of course, lots of references to penalties, free kicks, and corners — but the game is still fairly basic on its general playability. Gottlieb are still trying to find that one game that clicks with pinball fans — but to give them their due they are real triers!

Shock horror probe department. Can it be true? Matthew Broderick, the star of the movie War Games — the one about the computer-kid who almost starts World War Three by tapping into the American defence system with his home micro — doesn't really like computers! Talking to the London *Evening Standard* Matthew said: "Computers are not my thing at all. I don't like them and I don't understand them very well. I play video games, but even then I like pinball more."

Don't forget we're still interested in hearing your views on pinball and your high scores too.

Illustrations: Dorian Cross

ELEVATOR ACTION

Pee-awww! Whee! Zzing! You'll have to duck, dodge and jump to escape the bullets of those shifty-eyed, trigger-happy security men.

Elevator Action certainly lives up to its title — your aim is to get from the top to the bottom of a top security defence building via lifts and escalators.

In your search for the top secret documents, you'll come up against a crew of lean, mean security cops, all toting pistols and ready to stop you at any cost from reaching your get-away car.

You'll have to keep your wits about you while you descend, as you stand a very good chance of getting shot.

On each floor is a series of closed doors, and a security man, or two, could leap out at any time blasting away. You carry a gun, as do all good trainees of 007, and you'll soon learn a few tricks to get past the baddies as you shoot up and down in the lifts.

Using your joystick to keep the lift between floors, wait until one of the baddies takes a pot shot at you and then quickly move to his level and shoot back. Because there is a small time delay while he reloads, you can be sure of a safe hit!

Trained by your government, you're also a karate expert. Using the jump button, you can leap off the lift and deliver a lethal, mind-blowing kick to your opponent which will effectively lay him out!

Red doors appear at random and behind each one are secret documents which will earn you bonus points. If you go for the red doors, keep your eyes peeled as the guards will redouble their efforts to get you.

As you descend, the floors become wider, there are more doors, more security men and up to five lifts travelling up and down. A lot of skill is needed to reach this stage, to dodge the rapid hail of fire and still get through to the next floor in one piece.

The building must resemble the Empire State in size as there seem to be an awful lot of levels to get through before you can make a run for it.

Elevator Action by Taito Corporation has a really original theme and I found it a pleasant change from the normal spaceage shoot-em-ups.

BLAZE THOSE STAR BANDITS!

STAR BLAZER

Scramble! Bandits at 3 o'clock! You push your joystick forward and enter the fray. The space city must be saved at all costs.

Weaving and dodging through the city's underground highways, you whiz round a sharp 90 degree bend to beat off an enemy attack of fighter space ships. You can't relax your vigilance for a second — more fighters are attacking from the left.

Leaving the city you swoop through the crags and peaks of a mountain range to enter a valley. With lasers firing, you steady your craft and take careful aim at a convoy of tanks.

Star Blazer by Sega is the official follow-up to Astron Belt but, unlike Astron Belt which is played entirely in space, you will be battling it out over many different terrains which include the interstellar airport, rocky mountains, oceans and deepest space.

The graphics are comparable with Astron Belt and are produced with the aid of Scanimate, a device which Sega claims creates ultra-realistic images. I tend to agree. The ocean seems to heave and roll and the fighters and enemy mothership are very life-like — they resemble the Empire's battle ships of Star Wars fame.

Arcade managers will now be able to convert the old Astron Belt machines to the new Star Blazer by using the conversion kit from Sega.

DONKEY KONG SWINGS BACK

DONKEY KONG

One of the latest games from Nintendo is Donkey Kong 3 and the new game introduces a likeable character, Stanley a gardner, who takes over where Mario left off — only this time he fends off the mad monkey to defend his greenhouse.

Armed only with a spray gun, Stanley chases Donkey Kong up the vines, keeping nasty insects and critters away from his flowers. Each pest has a personality of its own and Stanley must work fast and furiously to keep the creepies under control. If he is quick and cunning enough, he can get the super sprayer and make quick work of Donkey Kong and his pack of pests.

There are three different playboards and four difficulty levels to Donkey Kong 3 providing, variety and challenge. One or two persons can play and each player can get from three to six game lives. When you reach 30,000, 40,000 and 50,000 points, bonus lives are awarded.

The character's proven popularity, combined with fast action and superior sound effects, make Donkey Kong 3 a sure hit in arcades.

SAVED BY A SAMURAI SWORD

CLIFF HANGER

It's nail-biting stuff as your two lanky heroes almost career off the edge of a cliff in their efforts to escape the bunch of heavies in hot pursuit.

Aptly named, Cliff Hanger keeps you on your toes throughout this fun-packed game filled with bizarre and amusing scenes, including nerve-racking car and helicopter chases, a beautiful girl to rescue and a meeting with some sinister hooded gangsters.

With animated cartoon style graphics, comparable to Dragon's Lair, Cliff Hanger is one of the first games of its type to reach the UK. In the next few months we predict that laser disc games will become quite common in the arcades, but at the moment they are still very much a novelty.

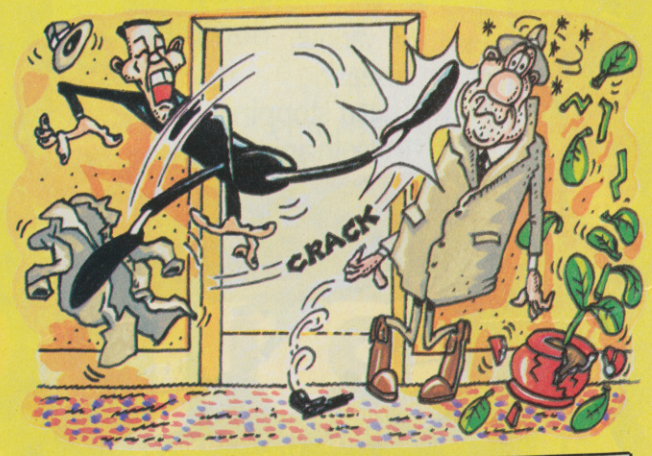
The story begins with your two young lads escaping from a casino with bags of counterfeit money. They leap into their bubble car and a mad chase ensues through the busy streets.

Arriving in the country, they have a puncture and, whilst repairing this, they see the Mafia-like baddies roar past in a limousine chasing a helpless and beautiful blonde in a 2CV! Leaping to their feet, the boys pile into the bubble and give chase. A helicopter chase follows and our intrepid heroes are rescued by the timely arrival of a samurai warrior in the city's sewers! As he brings the 'copter crashing to the ground with his sword, he utters a few memorable words in a very un-Japanese accent — "Once again I cut a worthless object"!!

A four-way joystick and feet and hand buttons control the action which is played out in cartoon-style graphics. Instructions like 'Stick' and 'Action' will flash onto the screen and it's then up to you to decide in which direction to move and whether to use hands or feet. Each time you make a wrong move, you'll be told what you did wrong.

As in all laser disc games, there is a dead area between scenes while the laser scans the disc for the next scenario. This has been very well disguised with a notice wishing you good luck in the next scene.

With lots of action and great graphics, Cliff Hanger by Stern Electronics will certainly be a hit in the arcades in the New Year.



WHIZZKID RACES INTO ACTION

SUPERBIKE

If you think you're a scrambling whizz-kid — then try riding the Super Bike.

Bombing down a country lane you shift into top gear and revving up your bike try to break the ton. Suddenly a series of potholes split the road in front of you — jerking on the handle bars you pull the bike into the air and sail across them. But don't get too confident, more is to come.

Packed full of stunts, you've got every opportunity to prove that you're at least as good as or better than the infamous Eddie Kidd. Leaping over potholes, fallen trees and bushes is the least of your problems. Armies of death heads in the form of skulls and crossed bones descend on you from out of the blue and, armed with a fire button, you must blast them back to hell before they land on you.

Other feats of skill and dexterity will include whizzing up a ramp and jumping over a line of buses and, providing you've managed to stay on your bike, you'll reach a tunnel which has to be negotiated to reach the end of the game.

Beware the skulls — they'll be attacking from behind as well as in front.

CUNNING IN THE COCKPIT

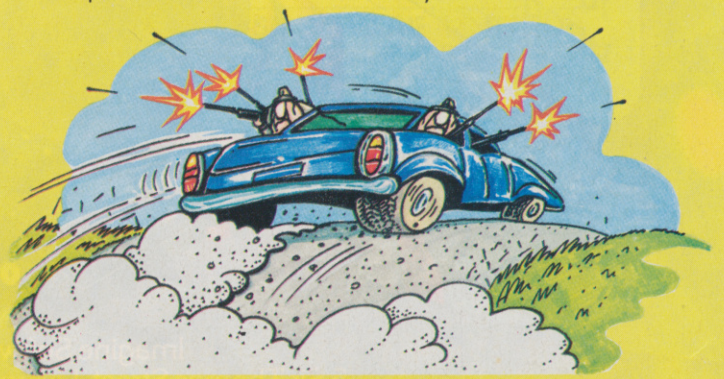
FIRE FOX

Atari is entering into the laser disc games race with what promises to be a thrilling spin-off from the movie Fire Fox, based on the action film by Warner Brothers which starred Clint Eastwood.

It's rumoured that hundreds of thousands of dollars were spent buying the rights to Fire Fox and producing the arcarde game with the aid of a simulation model of the cockpit.

You've stolen a top secret Russian fighter jet and have to fly it out of Russian territory to the Americans. The Russians don't let you get away easily and send up missiles and other fighter jets to stop you. Your plane has its own weapons system, but you'll have to use your skill as a fighter pilot and a lot of native cunning to escape in one piece.

Atari believe that Fire Fox will be a spectacular success and are planning to launch it sometime this year.



THE SEARCH IS ON FOR THE C&VG 1984 ARCADE CHAMPION!

Have you rescued the Princess in Dragon's Lair? Or have you come first in the Pole Position Grand Prix? Or maybe you've destroyed the Zaxxon robot? If so you are a prime candidate for our 1984 Arcade Championship title.

Your name may well be plastered all over the high score tables on several machines in your local arcade — but believe me, you can only call yourself a true arcade champ when you stand up to receive the *Computer and Video Games* Arcade Champion trophy!

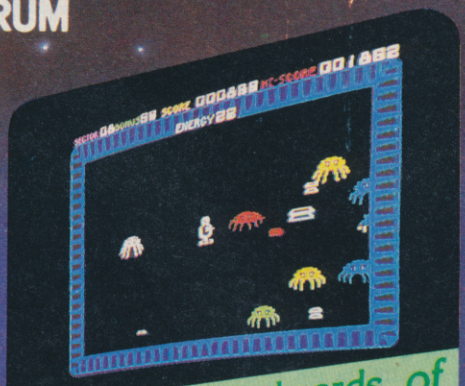
In our next issue we'll begin the search for our 1984 champion. Your first move will be to fill out the coupon and mail it to us. All we ask you to do is to take the form along to your local arcade, pub or the place where your favourite arcade machine lurks, get that high score and get the publican or arcade owner to witness it for you.

You can aim for a high score on up to three different machines. Your chances of reaching our grand final in the summer are increased if you enter on more than one machine. There will be a grand prize for the overall champion plus runners-up prizes too. So don't forget — get next month's *Computer and Video Games* and begin your quest to become King — or Queen — of the arcades!

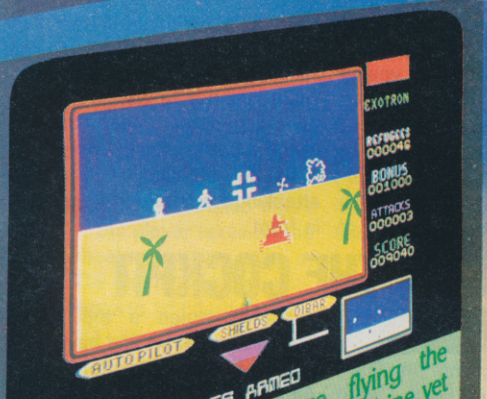
THE TENSION MOUNTS, THE ADRENALIN FLOWS. THE ADVENTURE BEGINS...

FOR YOUR ZX SPECTRUM

ALCHEMIST Can you discover the secret of the 'Spell of Destruction' and defeat the Evil Warlock. Even with your amazing powers of transformation the outcome is still uncertain.



ZIP ZAP Encounter hoards of aliens as your runaway droid enters the various domains of ever increasing intelligent attackers. Heart stopping tension and supersmooth animation.



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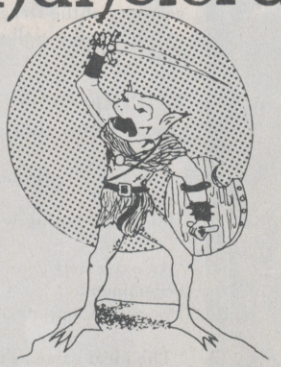

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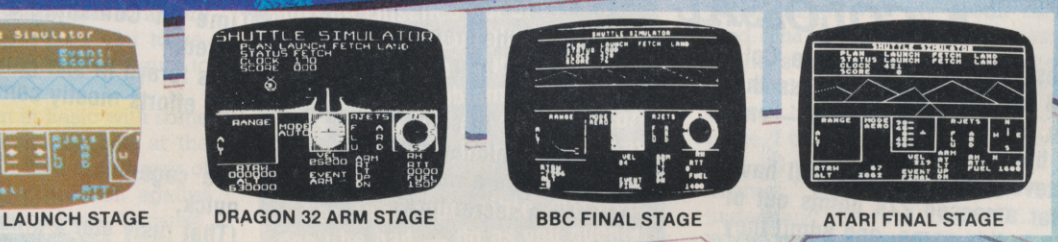

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KEEPING MARY AMUSED!

BY KEITH CAMPBELL

And now for something completely different! A graphics adventure where the action is played out before your very eyes!

Valhalla loads in a Spectrum under a striking title page and offers you six quests. These are to find special hidden objects: Ofnir (key), Drapnir (ring), Skornir (shield), Skalir (sword), Felstrong (axe) and Grimnir (helmet). These obnirs can only be discovronged in the above ordir.

The gameworld has a cast of dozens, and at any location you may expect to meet and perhaps cross swords with a range of gods and goddesses (including Mary), giants, dwarfs, wolves and dragons, of varying temperaments and abilities.

In search of the foreign objects, you move around by issuing the usual Adventure commands, but may also play a 'wild card' by jumping on to a ringway if one is present. This is a magical method of transportation rather than a continuous urban dual carriageway, and to travel one you must be carrying, of course, a ring!

Where *Valhalla* is different from other graphical Adventures is in its display format — the screen is split into three bands.

On arrival at a location, the top half displays an excellent hi-res picture, drawn very quickly. I got the impression that these graphics were composed of modules, re-arranged to give many combinations of picture from the same blocks.

Next, the lower 25% shows the text replies, whilst the final band rather too slowly draws the characters and objects present. The centre band therefore appears to form a continuous picture with the top band, like a stage.

In some ways, this game is like *Hobbit*, for all the characters have a mind of their own, and appear, disappear, drop things and attack you and each other according to their whims. But unlike *Hobbit*, they actually move. Their little legs walk, they jump about whilst fighting, and lift their wine to their heads when they drink. As this happens, so a text commentary is written below. If you want to pick up an object, then your figure will walk across the screen and get it.

Of course, all this slows down the rate

A COLOSSAL TALE OF COUNTRY FOLK

James Frost is stuck with a Colossal problem, trying to pass the clam. He is at his Witts End — and that baffles him too!

Steve Waller and Ian Hall have so far amassed 274 points out of 1100 in this game, and admit they can get no further. They have heard of dwarfs sleeping in a cave, and of dynamite. They urgently need directions to find them. If I can't help, who can, they ask? Oh dear — I can't? Who can?

But the most elegant Colossal plea comes from Mr. Dan Clark and Dr. Andrea Kingston, playing away at Skylark Farmhouse near Norwich. Rustics that they are, they turned bard to crave help:

Bumpkins' Lament

Colossal Classic mainframe game,
Is driving us poor kids insane.
It seems we've run right out of luck,
We get so far and then get stuck.

We have the jewelry and the vase,
The golden eggs and silver bars,
The spices and the precious nugget
(Quite a way we had to lug it).

Can you help us in some measure
With the other hidden treasure?
Y2, carved upon a rock,
Could it be a secret lock?

The rug we think perhaps can fly
To secret places in the sky.
Will the mirror smashed and broken,
Lead us to another token?

"Hocus! Sesame! Shazam!"
"Nothing happens" — blast and damn!
Bumpkins both in helpless plight
Please save us from more sleepless nights.

To which I can but reply:

Hi Dan and And! Oh woe is mine!
I've had no tape from Level 9,
And so, you see, I must rely
On that great Mainframe in the sky.

My problem is with ease predicted,
Time on Comshare's much restricted.
Thus forays in this game are brief
And efforts mostly come to grief.

I've caged the bird that wings it quick,
(That rusty star's a nasty trick!)
I've built and crossed a bridge of crystal,
And lost lamp's light for reasons fiscal.

I've kissed a frog (some think me kinky!)
And passed on warts to princess slinky.
I think I'll catch some tadpoles soon
The way those frogs cavort the room!

To readers all with 9's adventure!
I herewith offer my debenture,
In return for heaps of clues.
Please put an end to bumpkin blues.

EDUCATION THROUGH ADVENTURE

Solving an Adventure, as most of us know to our cost, is often a matter not only of solving a puzzle or being observant, but of hitting upon a particular word or phrase. Out comes a dictionary and Roget's Thesaurus, and with perseverance, we win through!

But what of an Adventure written in a foreign language? Never seen one around? Not played *'La Maison d'Amusement Mystère*? Nor have I!

Consider the plight of Walter Goegebeur from Edegem, near Brussels. "Hoping you will forgive my mistakes against 'living English'," writes Walter, "but you're my last hope from being kept away from cracking Scott's *Mystery Fun House*". Walter had spent more than a month consulting friends and relatives, and studying English dictionaries, to no avail. He still got shot from the shooting gallery.

Walter could not be sure whether it was an English word or phrase he needed, or if his problem was the puzzle itself! So I was pleased to be able to reassure him on his English, and spill the beans! (Sorry, Walter — I mean 'reveal all'). That, of course, highlights one of the difficulties of playing Adventure in a foreign language. The phrase I just used has nothing to do with making a nasty mess in the kitchen! However, because you have to master its idioms, playing Adventure in a foreign language is a good way of learning the 'living' language!

Rene di Giovanni wrote from Amsterdam to relate his difficulties with *Espionage Island* played on a ZX81. He was stuck in the plane, and unable to escape without dying. PULL CORD is the clue, and Rene could see the cord, but perhaps that phrase is particularly English.

On the other side of the coin, our lock-collector and masochist Adventure-converter, Bill Stanton, spent his holidays in Germany, and got involved in translating a French Adventure. "Have you ever tried getting French-speaking Germans to give you the sense of idiomatic French phrases in German-English . . . ?" asks Bill. He is now back home in St. Alban's trying to recover, and probably programming his Pet with well known Basic statements like: POUR JE% = 1 A 8 : SI (X(JE%)=Z) ET (Y=9) PUIS VA A 8000 PROCHAIN JE%.

On a more serious note, the Adventure format lends itself admirably to educational software of all sorts, especially languages. It is an area of software that has not been exploited. Wouldn't school pupils find it fun if their next French homework was "Comment reveillez-vous la dragon dormante"? They would have to play a special version of Adventureland — in compiled French, of course!

of play, but if you like watching it all happen, then you'll put up with that.

Valhalla has a range of special commands. WHO will list the characters in the text area, with an arrow pointing upwards to each image. WHAT will do the same for objects, HOW will tell you your current strength and so on. Should you type in anything untoward, you will be told Mary is not amused. A little fellow will walk onstage, and in a very determined way approach you to remonstrate. This will cause your figure to blush severely!

Valhalla is written in Basic with some machine code routines. A look at the listing won't reveal much in the way of clues. And despite protection against looking at the listing, it is easy because, despite all the ballyhoo preceding its arrival, and a seven-strong production team, *Valhalla* has at least one bug, which will cause the program to stop and you to reload. But will YOU discover the words that crash the game?

Valhalla is from Legend, overpriced and overrated at £14.95.

GATEWAY

When we had a family visit recently, all the kids made for the computer room. This is known in most houses as a dining room — but it enables us to play while we eat!

They ignored *Space Adventure* on the Spectrum (don't blame them) and *Zork* on the TRS-80 (fools!), and although Dougie aged 8, defected to *Donkey Kong* on the Dragon, Karl and Rebecca headed straight for *Gateway to the Skies* on the Beeb. Of course, the Beeb is a schoolfriend, and my ulterior motive in getting them to help me through a review whilst being hospitable to visitors had worked!

I went off to quaff home-made beer and make polite conversation, and occasionally popped back in to see how they were doing.

Quick responses — good! White on black text — bad! Replies less than terse — good! Karl had used a credit card in the village supermarket and got the reply "That'll do nicely!" I liked it ! Back to the quaffing . . .

I could hardly wait till they all went, and I was straight on to the Beeb.

Now hardy Adventurer's will never pass up the opportunity to take a lamp or food. Once spotted, you can guarantee there will be an area of darkness ahead, and that you will need sustenance. So I took the lamp offered me in the gift shop, and proceeded to the supermarket with my credit card for food. That is where it all went wrong.

The supermarket cashier ratted on the deal, disappearing with my card without handing over the food. On impulse, I tried to shoot her with my laser gun. "I don't understand the word cashier." EXAMINE FOOD. "I don't understand the word EXAMINE." LOOK FOOD told me where I was.

Now just as necessary as a lamp, is the Adventurer's stock-in-trade — "LOOK (or examine) object". Being able to look at, and examine things is one of the means by which an Adventurer gets mystery and excitement in a game. Through this device, the author is able to avoid blatant clues, making the player wait until he deduces there must be more information. The player is then often given a puzzle or cryptic clue to chew on.

I got the food later, but my enthusiasm was shattered. A pity, for this game held such promise!

Vocabulary — bad. Logic/difficulty — doubtful. Plot/theme — shakily promising. Shall I try again . . .?

Gateway to the Skies comes in two parts. I only looked at the first half, as you have to save data at the end of it to enter part two.

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PHILOSOPHERS, INCAS AND SORCERORS

Many try to enter the porthole, but are cursed by the Incas: carry the right things — one of them must be chiselled out of the flint.

To James Jennett playing *Ship of Doom:* a double switch may cast light on your problem.

To Brian Jones playing *Sorceror's Island:* bribery can pay dividends.

For the impossible mission: don't be bad — do as you oughta, take the bomb up to the water.

For philosophers everywhere: approach cheese with protective device, and after taking it, drop it every so often for a bit. To relieve your neck, find the workman in the ME passages. Hop, crawl and run when in danger! And how many dogs do you want? Settle for three? Can you spot the second? You'll have to spot the third!

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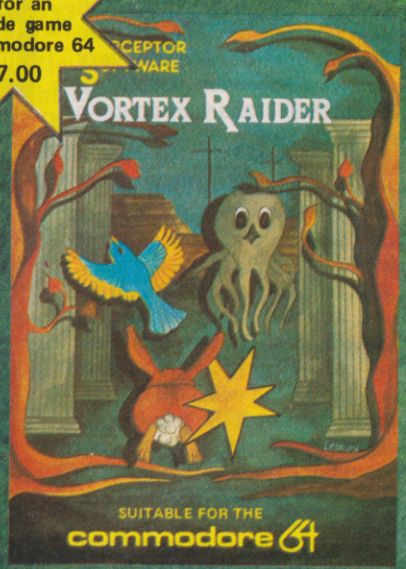

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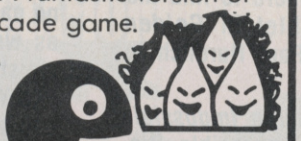

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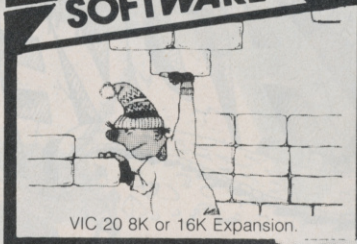

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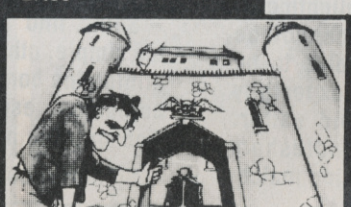

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HELPLINE

Every now and again one of those desperate people trapped in a small room with a calculator writes in. The fact they are not in an asylum yet is a tribute to their tenacity. Has ANYONE got out of there since I last wrote about *Deathmaze 5000*, a couple of years ago?

Mr. Poles of Lutterworth will be disappointed to learn that the general consensus of opinion is that the *Philosopher's Quest* lamp cannot be lit.

Congratulations to Robert Davidson from Macclesfield, and Colin Bignell down in Littlehampton, the only readers so far to lay claim to completing this game. In a long helpful letter, Robert suggests that Mr. Poles must have been sleeping with the lamp on, for the game can be completed without relighting it. Colin Bignell says it cannot be relit, and warns Mr. Poles to be careful in its use — especially when talking to the old sailor. James Frost of Windlesham agrees, and suggests using matches for extra time.

But what's this? Karl Howard writes from Rochdale and says the lamp CAN be relit — type RUB LAMP. I suspect the confusion is because Mr. Poles did not state whether or not he had run out of fuel.

Shaggy dogs, cheese and albatrosses are among the favourite subjects of all good Philosophers, and clues have arrived from numerous sources, including Roger Durrant, Mark Chaffey, and C. M. F. Bone, to help David Somekh.

Keith Lumb from Lowton near Warrington is shedding crocodile tears in the everglades. He is playing, or rather trying to play, *Sphinx*. Why does his magic bridge collapse when he tries to cross it? And what about those crocs?

Christopher Tihanyi is a troubled man. He's got five adventures in a state of chaos down in Bristol. I can help him directly with some, but here is a plea in which I join — how DO you open the Xenos safe?

Martin Brunt of Woolwich is lucky enough to be playing *Zork* on a VAX-11 750, but is unlucky to have run into severe problems. (Don't we all!?) What is the receptacle in the balloon for? Martin suspects it's for something with which to heat the air, but the only suitable object he can find is an ivory torch which burns out after melting the glacier. Come in *Zork* players!

Do you know where to find the second stone tablet in *Golden Voyage*, to help Paul Hurditch in Rotherham?

Some find *Mission Impossible* too simple, others impossible. Disarming the bomb has caused much confusion, especially to Andrew Dobson. See page 57 for the clue.

So many readers have written in with high *Hobbit* scores, it would take a page to list the names! So here is the only claimant to a 100% score so far — by Keith Oliver of Tollesbury.

From David Worbishley of Baldingstone, come some comments about *Swords and Serpents*. He suggests that Messrs. Hughes and Nosworthy have not enjoyed the full flavour of the game, which can only be done playing the two-player version.

"The great advantage this has is that the players can actually enter the dragon's lair, gather up the treasures inside, and talk to each other to combat the excruciating boredom," writes David. "Incidentally," he adds, "the dragon plays no part in the game and might just as well be a giant sausage as a sinister serpent."

If YOU are stuck in an Adventure, can help an Adventurer in distress, or have an interesting or amusing Adventure experience, write to me at Adventure Helpline, *Computer & Video Games*, Durrant House, 8 Herbal Hill, London EC1R 5JB.

CROSS THE DOTS!

Space Island turns your Spectrum into a control panel on board a starship in geostationary orbit above the island of Roba on the planet Zyro. You control an android who 'stands alone amidst wreckage and awaits your command.' Your TV set becomes a videoscanner (what else?) showing an 'orbital map' of Roba Island.

Somehow my Spectrum didn't quite have the feel of a control panel — well, let's face it, have you ever seen a control panel you can slip into your back pocket and not notice?

Obviously my pet android felt this, for when I tried to move him around the tiny island (him a dirty great cross trying to rendezvous with microscopic dots representing objects), he didn't respond with quite the alacrity one might expect from such a high-tech device. Once moving, this obstinate creature would proceed inexorably in the same direction until commanded otherwise. Even after a good night's sleep he would wake up and plod on regardless in obedience to his previous instruction!

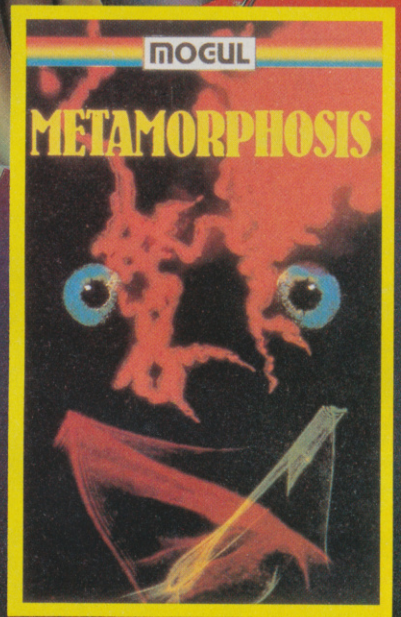
Apart from this painful method of movement, *Space Island* boasts a vocabulary of 19 words, yes folks — 19! Not whole words admittedly, but the initial letters of verbs.

The cassette inlay mentions slick machine code display. However, the program is written in Basic, and reaction is just not slick enough to give adequate control.

Space Island is for 48k Spectrum from Terminal Software, price £6.95. Fairly apt, for if I'd played it for much longer, I would now be suffering from terminal boredom.

MOGUL

THE HOTWARE PEOPLE



METAMORPHOSIS

You stumbled into the nest of the **Cyglorx** and find yourself fighting off robot tanks guarding the **Cyglorx eggs.** You think you have everything under control and then the eggs start **hatching.** Commodore 64 version features 4 different screens.

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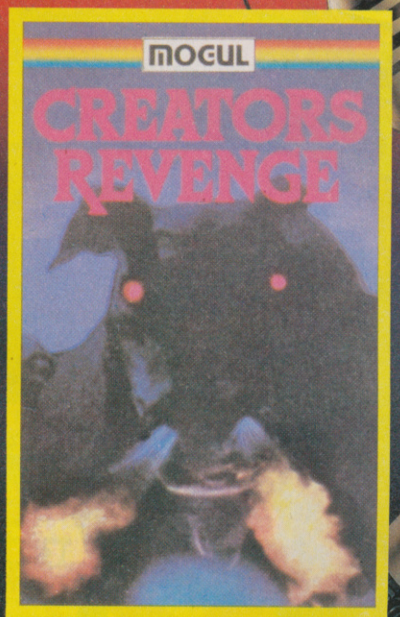

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The creator assembled a massive army of **robots** and **insects** to take revenge on the earth. Destroy insects, get treasures, and get the **neutron bomb deactivator.** Battle robots and **destroy** the neutron bomb before it annihilates your city. Miss and you must face **the mutants.** Features 4 different screens.

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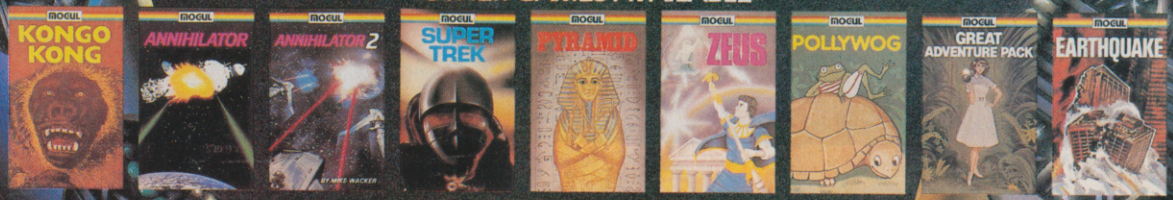

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The Electron and Carto

Pack up your paintbox, throw away your paintbrushes and move into the electronic age of art with our amazing new PIXSTIK™

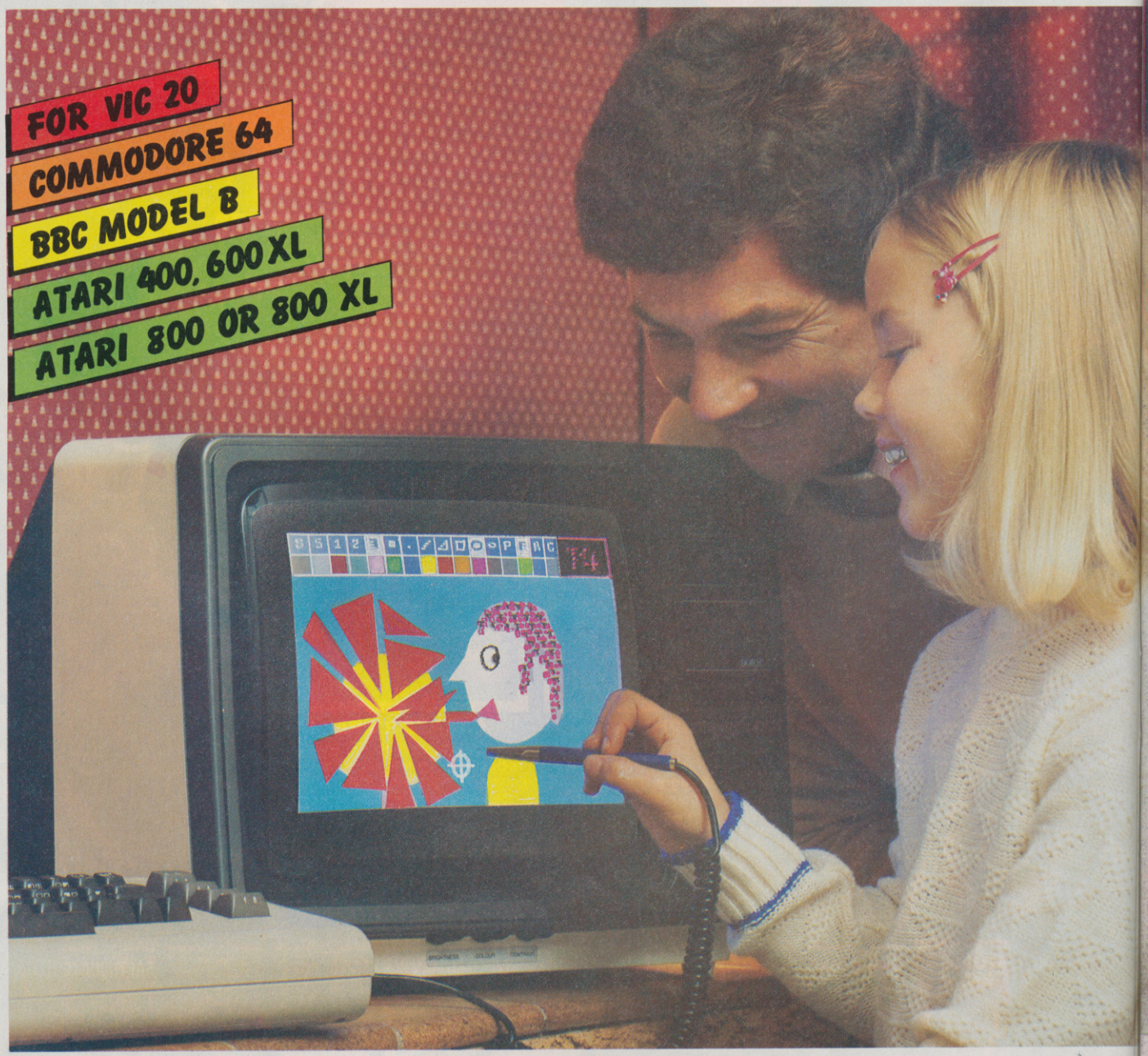
PIXSTIK™ opens the way for all the family to create colourful designs and pictures – yet it's so much cleaner and simpler to use than conventional crayons and paints. Plus you have the built-in advantage of the exclusive ABC feature. ABC stands for animate, bounce and cartoon, meaning you can even add movements to your sketches and drawings. It's just like creating your very own cartoon clips.

With PIXSTIK™, the colours never run dry and you don't have to worry about paper supplies.

You just plug in and all the materials you need are listed on the screen. You'll have access to up to 16 exciting colours and 16 separate commands. Simply give your instructions by pointing PIXSTIK™ at the appropriate colour or command.

PIXSTIK™ couldn't be easier to operate. Whether you're eight or eighty, you'll find it fascinating, especially when you discover the range of pictures you can produce.

Wherever your imagination goes, PIXSTIK™ will follow. It gives



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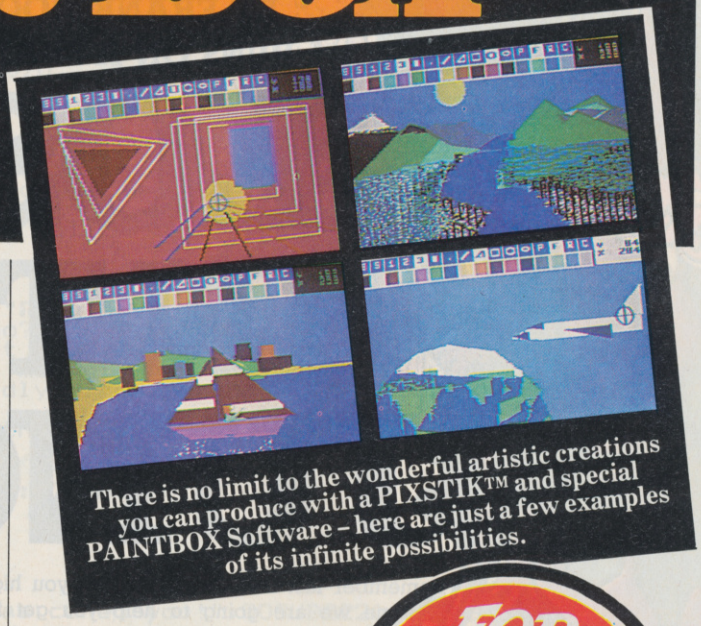


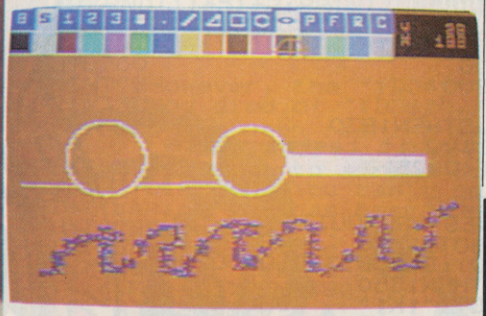
There is no limit to the wonderful artistic creations you can produce with a PIXSTIK™ and special PAINTBOX Software – here are just a few examples of its infinite possibilities.

you freehand freedom or creates straight lines, triangles, rectangles, circles and ellipses with geometrical precision.

Choose whether to fill your shapes with solid colour or leave them blank. And if, after that, you still favour a paintbrush effect, simply move PIXSTIK™ into paintbrush mode and it will do the rest.

What makes PIXSTIK™ even more special is that it doesn't simply stop with a completed picture. Because it incorporates the special ABC feature, you can use individual designs as part of animated sequences and cartoons.

At the "animate" command, pictures stored in memory will reappear in turn. On the "bounce" instruction, your pictures will move forwards and backwards and when "cartoon" is called up, they will reappear continuously in sequence with just the effect of a professional cartoon clip.



Pictures can be drawn using fine lines, blocked lines or paintbrush effects for extra variety.

PIXSTIK™ can bring all your pictures to life. Use it to show the sun moving across the sky, smoke curling from a chimney and an arrow hitting its target.

The only limit on PIXSTIK™ designs is your own inventiveness. There are even three different stick modes to ensure different colours can be drawn across each other without merging.

For only £29.95, the PIXSTIK™ pack includes *three* superb computer games to play with your stick, plus a comprehensive instruction manual.

No paintbox could ever offer so much. So swap your paintbrush for a PIXSTIK™ today. It's the paintbox of the future.

FOR £29.95 INC. VAT Post & Packing

PIXSTIK™

COMPLETE MULTIPACK including PIXSTIK™ Paintbox Software Instruction Manual and 3 FREE GAMES!

PIXSTIK™ is available by mail order only, exclusively from Computapix Ltd., Gores Road, Kirkby Industrial Estate, Liverpool. Dealers: Contact Selena on 051-547 2741

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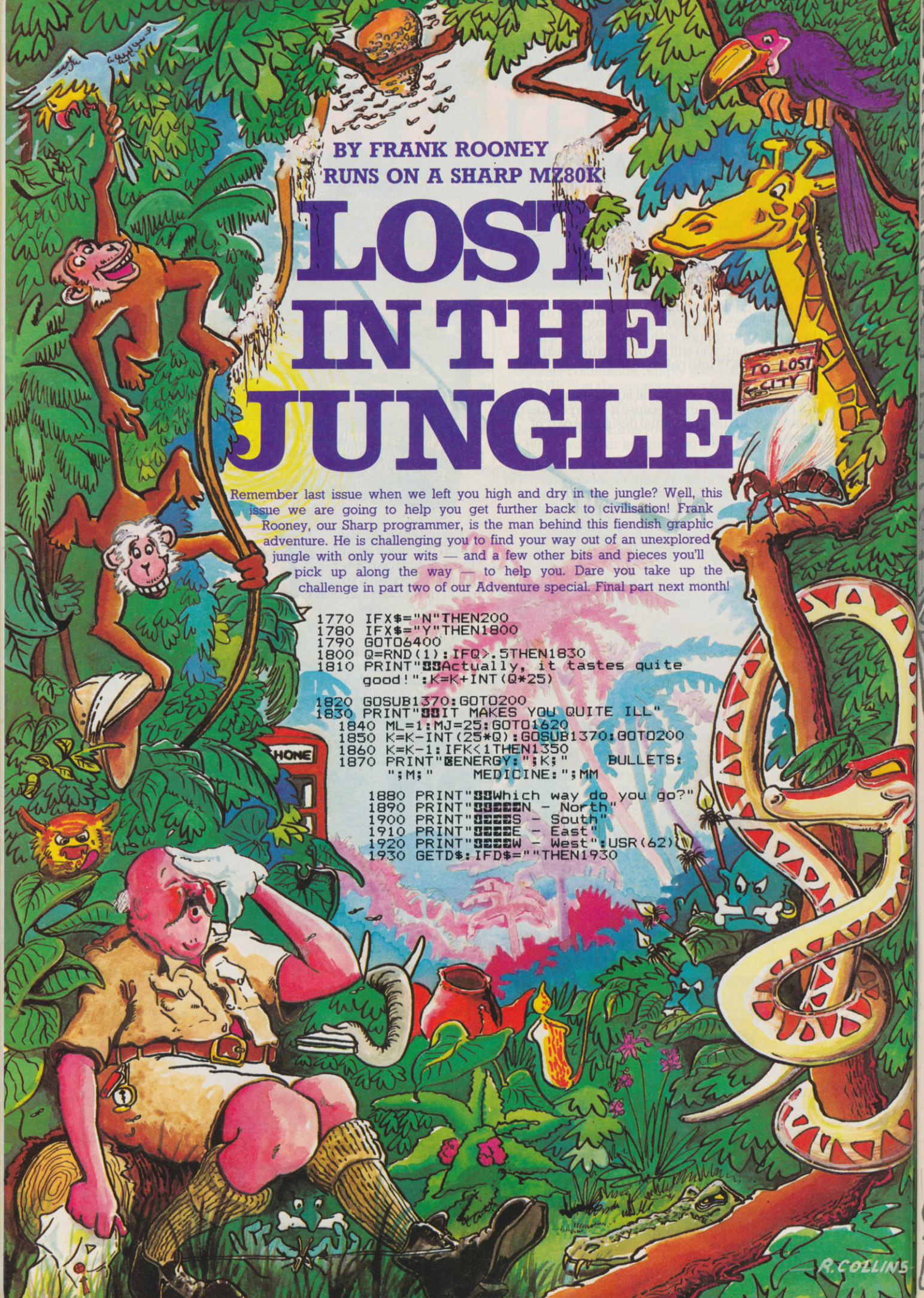

BY FRANK ROONEY

RUNS ON A SHARP MZ80K

LOST IN THE JUNGLE

Remember last issue when we left you high and dry in the jungle? Well, this issue we are going to help you get further back to civilisation! Frank Rooney, our Sharp programmer, is the man behind this fiendish graphic adventure. He is challenging you to find your way out of an unexplored jungle with only your wits — and a few other bits and pieces you'll pick up along the way — to help you. Dare you take up the challenge in part two of our Adventure special. Final part next month!

```
1770 IFX$="N"THEN200
1780 IFX$="Y"THEN1800
1790 GOTO6400
1800 Q=RND(1):IFQ>.5THEN1830
1810 PRINT"  Actually, it tastes quite
     good!":K=K+INT(Q*25)

1820 GOSUB1370:GOTO200
1830 PRINT"  IT MAKES YOU QUITE ILL"
1840 ML=1:MJ=25:GOTO1620
1850 K=K-INT(25*Q):GOSUB1370:GOTO200
1860 K=K-1:IFK<1THEN1350
1870 PRINT"ENERGY:";K;"     BULLETS:
     ";M;"     MEDICINE:";MM

1880 PRINT"  Which way do you go?"
1890 PRINT"     N - North"
1900 PRINT"     S - South"
1910 PRINT"     E - East"
1920 PRINT"     W - West":USR(62)
1930 GETD$:IFD$=""THEN1930
```

```
1940 IFD$="N"THENX$="S":F=F-1:G=G+1:GOTO1990
1950 IFD$="S"THENX$="N":F=F+1:G=G-1:GOTO1990
1960 IFD$="E"THENX$="W":H=H-1:I=I+1:GOTO1990
1970 IFD$="W"THENX$="E":H=H+1:I=I-1:GOTO1990
1980 GOTO1930
1990 IF(F=0)+(G=0)+(H=0)+(I=0)THEN2030
2000 IFK<5THEN1350
2010 IF(F<5)+(G<5)+(H<5)+(I<5)THEN2070
2020 RETURN
2030 PRINT"■■■■WELL DONE !!"
2040 MT$="G0AB¯C¯D¯E¯#F¯GRO"
2050 TEMPO5:MUSICMT$;MT$;MT$
2060 PRINT"■You made it back to civilization!":GOSUB5310:GOTO7250
2070 PRINT"■You can see sunlight through the tree":PRINT"■tops."
2080 GOSUB4780:RETURN
2090 Q=INT(RND(1)*4)+1:IFQ=1THENDD$="yellow fever"
2100 IFQ=2THENDD$="malaria"
2110 IFQ=3THENDD$="typhoid"
2120 IFQ=4THENDD$="cholera"
2130 PRINT"■Oh dear!":PRINTTAB(10);"■You have caught ";DD$;".":GOSUB5140
2140 PRINT"■What are you going to do?          "
2150 PRINT"■■■■■A - Wait & see if it goes away"
2160 PRINT"■■■■B - Take a bottle of medicine"
2170 PRINT"■■■■C - Wait for a friendly Witch Doctor"
2180 PRINT"■■■■■■■to come along"
2190 PRINT"■■■■D - Try to continue through the":PRINT"■■■■■■■jungle":USR(62)
2200 GETX$:IFX$=""THEN2200
2210 IFX$="C"THENPRINT"■There are no friendly Witch Doctors in"
2220 IFX$="C"THENPRINT"this jungle!":GOSUB1370:GOTO2390
2230 IFX$="D"THEN1350
2240 IFX$="A"THEN2320
2250 IFX$="B"THEN2270
2260 GOTO2200
2270 IFMM=0THEN2310
2280 MM=MM-1:PRINT"■■The medicine has cured you!":GOSUB5220:GOSUB1370
2290 K=K-10:IFK<2THEN2380
2300 GOTO200
2310 PRINT"■You have no medicine left!"
2320 Q4=RND(1):IFQ4<.5THEN2340
2330 GOTO2390
2340 Q2=INT(RND(1)*5)+2:PRINT"■■■■■■■■■■■■■■■You have been ill for";Q2;
2350 PRINT" weeks, but":PRINT"you are better now.":GOSUB5220:GOSUB1370
2360 K=K-INT(Q4*100):IFK<2THEN2380
2370 GOTO200
2380 PRINT"■However, the ";DD$;" has left you so":PRINT"■weak-":GOTO1350
2390 PRINT"■You died of ";DD$;".":GOSUB5230:GOSUB1370:GOTO7050
2400 PRINT"■It has been raining very hard for":PRINT"several days.":TM=0
2410 M$="      ■■■■■■■■      "+CHR$(103)+"■■■■■■■"
2420 PRINT"■■You come to a river containing piranhas!■"
2430 GOSUB1370:PRINT"■You can't go back because the ground"
2440 PRINT"behind you has been turned to quicksand.■":GOSUB1370:GOSUB5730
2450 PRINT"■■■What do you do?"
2460 PRINT"■■■■■A - Build a boat (which takes":PRINT"■■■■■■■a lot of energy)"
2470 PRINT"■■■■B - Take a chance and swim":USR(62)
2480 GETX$:IFX$=""THEN2480
2490 IFX$="A"THEN2520
2500 IFX$="B"THEN2610
2510 GOTO2480
2520 IFK<22THENPRINT"■You haven't enough energy to build a":PRINT"■boat!"
2530 IFK<22THENPRINT"■You'll have to swim!":GOSUB1370:GOTO2610
2540 K=K-20:IFK<2THENPRINT"■You have used up all your energy"
2550 IFK<2THENPRINT"■building the boat!":GOSUB1370:GOTO1350
2560 Q=RND(1):IFQ>.85THEN2590
2570 GOSUB5860
2580 PRINT"■■You made it across the river!":GOSUB1370:GOTO200
2590 PRINT"■Your boat was not strong enough!":PRINT"■IT HAS SUNK!!"
2600 TM=1:GOSUB1370:GOSUB5860
2610 PRINT"■■■SPLASH!!"
2620 TEMPO7:MUSIC"¯GO¯#F¯E¯D¯CBAG#FEDC_B_A_G"
2630 IFK<6THENPRINT"■■You haven't the energy to swim!":GOTO2670
2640 K=K-5:Q=RND(1):IFQ=<.6THEN2670
2650 GOSUB6050
2660 PRINT"■■■You were lucky to eascape the piranhas!":GOSUB1370:GOTO200
2670 GOSUB6130
2680 PRINT"■■Oh dear - a piranha got you!":GOSUB1370:GOTO7050
2690 JK=0:PRINT"■You are hungry and you see some coconuts"
2700 PRINT"high up in a tree.":GOSUB4220
2710 PRINT"■■■■■■■What do you do?          "
2720 PRINT"■■A - Try to shoot them down"
2730 PRINT"■B - Use your slingshot"
2740 PRINT"■C - Throw your knife at them"
2750 PRINT"■D - Grumble, then go on":PRINT"■■■■your way■":USR(62)
2760 GETX$:IFX$=""THEN2760
2770 IFX$="D"THEN200
2780 IFX$="B"THEN2820
2790 IFX$="A"THEN2960
2800 IFX$="C"THEN2930
2810 GOTO2760
2820 IFSS=0THENPRINT"■■■■■You have lost your slingshot - remember?■"
```

R.COLLINS

The REAL Challenge!

For your ORIC or SPECTRUM

Jogger Guide your joggers across a 4-lane motorway and crocodile infested river to reach their safe haven through the gap in the fence. Each time a jogger is safely home the next one will have to encounter more lorries and cars on the motorway but fewer crocodiles and logs in the river. Full on-screen instructions. M/code, sound effects and full action colour graphics.
Oric Author – Adrian Sheppard.
Spectrum Author – Mike Howard
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Dinky Kong Attempt to rescue your lovely girlfriend who is held captive by the angry gorilla. As you climb the connecting ladders and move along the gangways, the gorilla will be throwing barrels and fireballs at you! The only way to reach her is to leap over these obstacles and progress to the top. M/code action with sound effects, full colour action graphics, skill levels etc.
Author – Adrian Sheppard.
Oric 48K - **£6.95**

Quincy A superb dice game for 2 to 6 players. 3 throws per go to try and score points by obtaining certain combinations, i.e. 3 of a kind, a run, pairs etc. 13 go's to complete a game. The highest score is the winner! It's a game that is easy to learn but can be won by skilful and thoughtful play. Full colour graphics, on-screen instructions, bonus scores, etc.
Author – Tony Churcher.
Spectrum 48K – **£4.95.**

Grail You have been chosen to seek and recover the Holy Grail from the Castle Perilous. Throughout the course of your task you will have to use your skill, intelligence and logic (along with a little luck) as you encounter many foes. You will have the opportunity to gather weapons and armour to fight with, but if you are wounded your strength will drain away – many other features such as warp, jewels etc.
Author – Adrian Sheppard.
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Spectrum Author – Mike Howard
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```
2830 IFSS=0THEN3080
2840 FORR7=1TO20:FORR8=150TO1STEP-1:POKE4514,R7:POKE4513,R8:USR(68):NEXT
2850 USR(71):Q=RND(1):IFQ>.5THENPRINT"■■■■■YOU MISSED!":K=K-1:GOTO3080
2860 PRINT"■■■■■GOOD SHOT!!":Q6=INT(RND(1)*5)+2
2870 PRINT"■";Q6;" coconuts have fallen.":GOSUB1370:GOSUB4440
2880 PRINT"■■Do you eat them? (Y or N)":USR(62)
2890 GETX$:IFX$=""THEN2890
2900 IFX$="Y"THENK=K+5*Q6:GOTO200
2910 IFX$="N"THEN200
2920 GOTO2890
2930 IFKK=0THENPRINT"■■■■■You lost your knife, remember ?":GOTO3080
2940 PRINT"■■■■■You missed - and you have lost your"
2950 PRINT"■knife in the undergrowth!":KK=0:GOSUB1370:GOTO200
2960 IFM=0THENPRINT"■■■■■You have no bullets left!":GOTO3080
2970 PRINT"■■■■■BANG!!!":M=M-1:GOSUB6310
2980 Q7=RND(1):IFQ7<.25THENPRINT"■■■■■■■■■■■■■■■■■YOU MISSED!":GOTO3080
2990 IFQ7>.85THEN3010
3000 GOTO3070
3010 PRINT"■You have shot a monkey by mistake!":GOSUB1370
3020 PRINT"■■Do you eat it? (Y or N)":USR(62)
3030 GETX$:IFX$=""THEN3030
3040 IFX$="Y"THENK=K+35:GOTO200
3050 IFX$="N"THENGOTO200
3060 GOTO3030
3070 PRINT"■■■■■■■■■■■■■■■■■GOOD SHOT!!":Q6=INT(RND(1)*3)+2:GOTO2870
3080 GOSUB1370:PRINT"■■■":JK=1:JJ=30:GOSUB4220:GOTO2710
3090 PRINT"■You are hungry and you see a bird flyingoverhead."
3100 PRINT"■■What do you do?"
3110 PRINT"■■■■■A - Shoot it"
3120 PRINT"■■■■B - Use your slingshot"
3130 PRINT"■■■■C - Throw your knife at it"
3140 PRINT"■■■■D - Ignore it":USR(62)
3150 GETX$:IFX$=""THEN3150
3160 IFX$="D"THEN200
3170 IFX$="C"THEN3210
3180 IFX$="B"THEN3240
3190 IFX$="A"THEN3270
3200 GOTO3150
3210 IFKK=0THENPRINT"■■You lost your knife - remember?":GOTO3260
3220 PRINT"■■You missed the bird - and your knife is"
3230 PRINT"■lost in the undergrowth!":KK=0:GOSUB1370:GOTO200
3240 IFSS=0THENPRINT"■■You lost your slingshot - remember?":GOTO3260
3250 PRINT"■■The bird is too high up to use a":PRINT"■slingshot."
3260 GOSUB1370:PRINT"■Now what do you do?":GOTO3110
3270 IFM=0THENPRINT"■■You are out of bullets!":GOTO3260
3280 PK=53841:PB=219:PC=0:CC=0
3290 PRINT"■":POKE4466,22
3300 PRINT"■"
3310 POKE4466,16:PRINTTAB(35);"■\"
3320 PRINTTAB(36);"\■":PRINTTAB(36);"\■"
3330 PRINTTAB(37);"■":PRINTTAB(37);"||":PRINTTAB(37);"||"
3340 PRINTTAB(10);"■Press 'SPACE' to fire.":GOSUB1370
3350 PRINT"■■_"
3360 PRINT"■■._"
3370 PRINT"■■\._"
3380 PRINT"■■\_/"
3390 PRINT"■■\_/._"
3400 PRINT"■■ \_/._"
3410 BB$="■■ \_/._/■■■■■■■ /''''''"
3420 BC$="■■ \_/._■■■■■■■ /''''''"
3430 XX=1
3440 PRINTTAB(XX);BB$:GOSUB40:PRINTTAB(XX);BC$:GOSUB40
3450 IFXX=33THEN3470
3460 XX=XX+1:GOTO3440
3470 PRINTT2$;"■■■ \_/.":GOSUB40
3480 PRINTT2$;"■ /''''''"
3490 PRINTT2$;"■■■ \_/":GOSUB40
3500 PRINTT2$;"■ /''''''"
3510 PRINTT2$;"■■■ \_/":GOSUB40
3520 PRINTT2$;"■ /''"
3530 PRINTT2$;"■■■ \_":GOSUB40
3540 PRINTT2$;"■ /"
3550 PRINTT2$;"■■■ ":GOSUB40
3560 PRINTT2$;"■ "
3570 PRINT"■■■■■■■■YOU MISSED YOUR CHANCE!":GOSUB1370:GOTO200
3580 LL=1:CJ=0
3590 BD$="      ■■■■■■■      ■■■■■■■ \_/._■■■■■■■ /''''''■■■■■■■      "
3600 PK=53841:CC=0:PB=240
3610 POKEPK,PB:PK=PK-82:CC=CC+1:IFCC=7THEN3630
3620 GOTO3610
3630 POKE4466,14:PRINTTAB(35);" ":PRINTTAB(36);" "
3640 PRINTTAB(36);"┌"
3650 PRINTTAB(36);"/":PRINTTAB(35);"/"
3660 PRINT"■";TAB(16);"              ":PRINTTAB(16);"              "
3670 POKE4466,LL
3680 PRINTTAB(17);BD$
3690 LL=LL+2:IFLL=19THEN3710
3700 GOTO3670
3710 PRINT"■■■■■GOOD SHOT!!"
3720 PRINT"■Do you eat the bird? (Y or N)":USR(62)
```

```
3730 GETX$:IFX$=""THEN3730
3740 IFX$="N"THEN200
3750 IFX$="Y"THENK=K+15:GOTO200
3760 GOTO3730
3770 PRINT"■You come face to face with a snake!":SP=15:SN$=CHR$(105)
3780 SL$="■■■■■■■■■■"
3790 PRINTSL$;"■────────────────────────────────────────"
3800 PRINTSL$;TAB(SP);" ";B$;" ":IFSP=30THEN3820
3810 SP=SP+1:GOTO3800
3820 PRINTSL$;TAB(SP);" ";B$;"      ";SN$;" "
3830 PRINT"■■■You turn away - but it comes after you.":SP=SP-1
3840 IFSP=1THEN3860
3850 GOTO3820
3860 PRINT"■■■■■■■■■What do you do now?":PRINT"■■■■A - Shoot it"
3870 PRINT"■■■■B - Use your knife"
3880 PRINT"■■■■C - Try to hit it with a log":USR(62)
3890 GETX$:IFX$=""THEN3890
3900 IFX$="A"THEN3940
3910 IFX$="B"THEN4100
3920 IFX$="C"THEN4110
3930 GOTO3890
3940 IFM=0THENPRINT"■■You have no bullets left!":GOSUB1370:GOTO4210
3950 POKE4466,11:FORZ=1TO8:PRINTSPC(39):NEXTZ:PRINT"■■■■■■■BANG !!"
3960 GOSUB6310:M=M-1:Q=RND(1):IFQ<.75THEN4020
3970 PRINT"■MISSED!"
3980 PRINT"■However, the snake ran away frightened.":ST=7
3990 PRINTSL$;TAB(ST);"  ";SN$
4000 IFST=35THENGOSUB1370:GOTO200
4010 ST=ST+2:GOTO3990
4020 PRINT"■GOOD SHOT!"
4030 PRINTSL$;"    ";B$;TAB(7);" * ":FORZ=1TO50:NEXTZ
4040 PRINT"■";TAB(8);"~_"
4050 PRINT"■■■■■■YOU KILLED IT!"
4060 GOSUB1370:PRINT"■■Do you eat it?":USR(62)
4070 GETX$:IFX$=""THEN4070
4080 IFX$="N"THEN200
4090 IFX$="Y"THENK=K+10:GOTO200
4100 IFKK=0THENPRINT"■■You lost your knife - remember?":GOSUB1370:GOTO4210
4110 POKE4466,11:FORZ=1TO8:PRINTSPC(38):NEXTZ
4120 Q=RND(1):SZ=2
4130 PRINTSL$;TAB(8);SN$;" "
4140 IFQ>.8THEN4180
4150 PRINTSL$;TAB(SZ);" ";B$
4160 IFSZ=5THENPRINT"■";TAB(7);"~_":GOTO4050
4170 SZ=SZ+1:GOTO4150
4180 PRINT"■■■You were too slow -":PRINT"■IT GOT YOU!":GOSUB1370
4190 PRINTSL$;"    ";B$;SN$;"      ":FORZ=1TO100:NEXTZ
4200 PRINT"■";TAB(3);CHR$(100):GOSUB1370:GOTO7050
4210 POKE4466,20:FORZ=1TO3:PRINTSPC(39):NEXTZ:PRINT"■■■":GOTO3860
4220 PRINT"■";TAB(27);"■■■   ~~~~~"
4230 PRINTTAB(27);"  ( ( ( ) "
4240 PRINTTAB(27);" ( ( ( ( ) ) ) "
4250 PRINTTAB(27);" ↙ ↙ ↙\| \| \| "
4260 PRINTTAB(27);"     oo||oo  "
4270 PRINTTAB(27);"      o||o   "
4280 PRINTTAB(27);"        \\   "
4290 PRINTTAB(27);"         \\  "
4300 PRINTTAB(27);"          \\ "
4310 PRINTTAB(27);"          ||  "
4320 PRINTTAB(27);"          ||  "
4330 PRINTTAB(27);"          ||  "
4340 PRINTTAB(27);"          \\  "
4350 PRINTTAB(27);"           \\ "
4360 PRINTTAB(27);"            \\ "
4370 PRINTTAB(27);"             \\ "
4380 PRINT"────────────────────────────────────────"
4390 IFJK=1THENPRINT"■■■":GOTO4410
4400 JJ=1:PRINT"■■■"
4410 PRINT"■";TAB(JJ);" ";B$
4420 IFJJ=30THENRETURN
4430 JJ=JJ+1:GOTO4410
4440 UU=9:Q=RND(1):IFQ>.75THENWW=31:GOTO4460
4450 WW=32
4460 POKE4466,UU:PRINTTAB(WW);"o"
4470 POKE4466,UU-1:PRINTTAB(WW);" "
4480 IFUU=18THENMUSIC"_B1":GOTO4500
4490 UU=UU+1:GOTO4460
4500 IFQ>.75THENPRINT"■■A COCONUT HIT YOU ON THE HEAD!!!"
4510 IFQ>.75THENPRINT"■";SPC(35):GOSUB1370:GOTO7050
4520 RETURN
4530 POKE4466,22:PRINTTAB(20);"~~~~~~~~~~~~~~~~~~~~"
4540 POKE4466,16:Q$(1)=T1$+"                "
4550 Q$(2)=T1$+"<    ◢◣    >"
4560 Q$(3)=T1$+"  \  |▪ω▪|  /  "
4570 Q$(4)=T1$+"   \ \_/ /   "
4580 Q$(5)=T1$+"    \/¥\/    "
4590 Q$(6)=T1$+"    / : \    "
4600 FORZ=1TO6:PRINTQ$(Z):NEXTZ:RETURN
4610 FORYU=16TO21:POKE4466,YU:FORZ=1TO22-YU:PRINTQ$(Z):NEXTZ
4620 NEXTYU:RETURN
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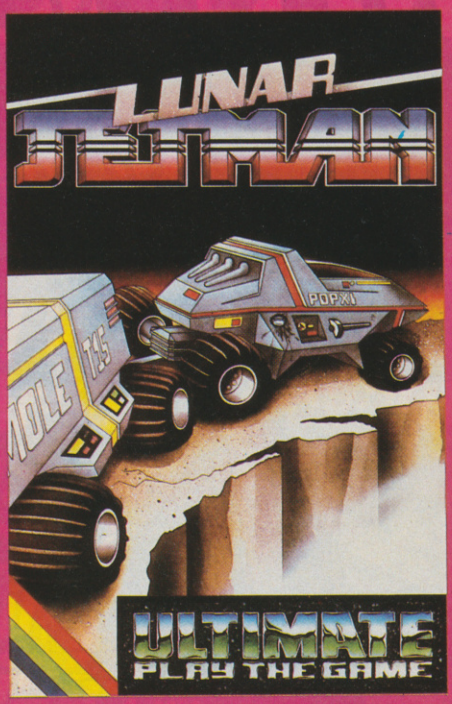

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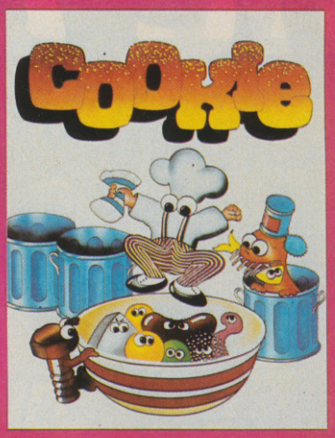

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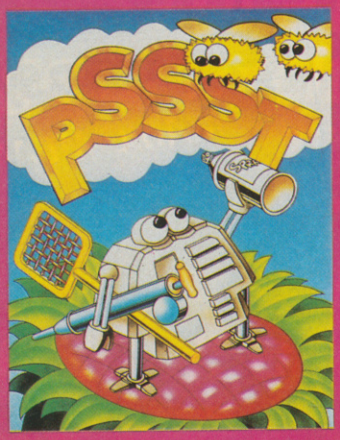

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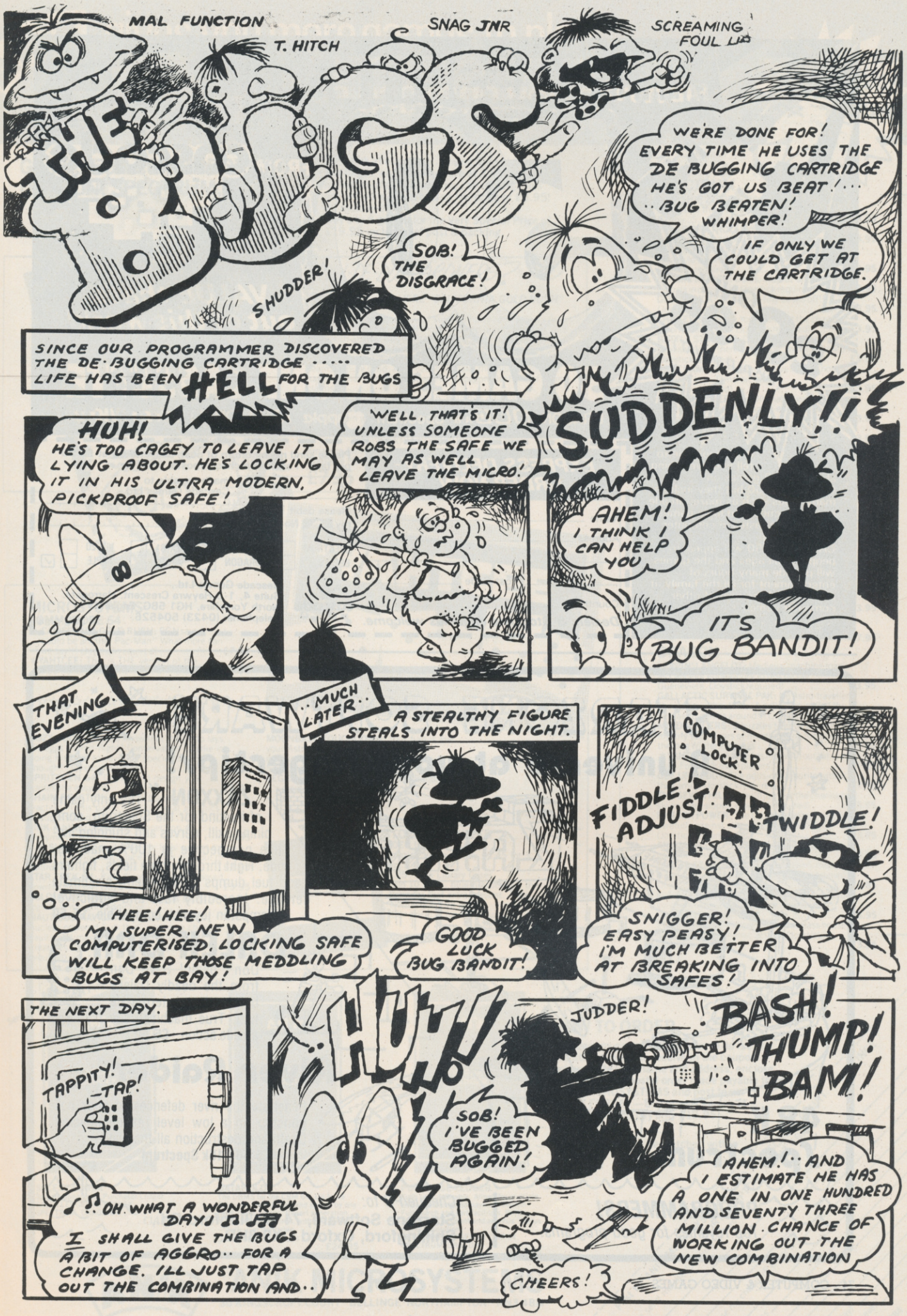
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T. HITCH
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WE'RE DONE FOR! EVERY TIME HE USES THE DE BUGGING CARTRIDGE HE'S GOT US BEAT!... ..BUG BEATEN! WHIMPER!
IF ONLY WE COULD GET AT THE CARTRIDGE.
SOB! THE DISGRACE!
SHUDDER!
SINCE OUR PROGRAMMER DISCOVERED THE DE-BUGGING CARTRIDGE ..... LIFE HAS BEEN HELL FOR THE BUGS
HUH! HE'S TOO CAGEY TO LEAVE IT LYING ABOUT. HE'S LOCKING IT IN HIS ULTRA MODERN, PICKPROOF SAFE!
WELL, THAT'S IT! UNLESS SOMEONE ROBS THE SAFE WE MAY AS WELL LEAVE THE MICRO!
SUDDENLY!!
AHEM! I THINK I CAN HELP YOU
IT'S BUG BANDIT!
THAT EVENING.
HEE! HEE! MY SUPER, NEW COMPUTERISED, LOCKING SAFE WILL KEEP THOSE MEDDLING BUGS AT BAY!
..MUCH LATER..
A STEALTHY FIGURE STEALS INTO THE NIGHT.
GOOD LUCK BUG BANDIT!
COMPUTER LOCK.
FIDDLE! ADJUST! TWIDDLE!
SNIGGER! EASY PEASY! I'M MUCH BETTER AT BREAKING INTO SAFES!
THE NEXT DAY.
TAPPITY! TAP!
♪♫ OH, WHAT A WONDERFUL DAY! ♫♪
I SHALL GIVE THE BUGS A BIT OF AGGRO.. FOR A CHANGE. ILL JUST TAP OUT THE COMRINATION AND..
HUH!
JUDDER!
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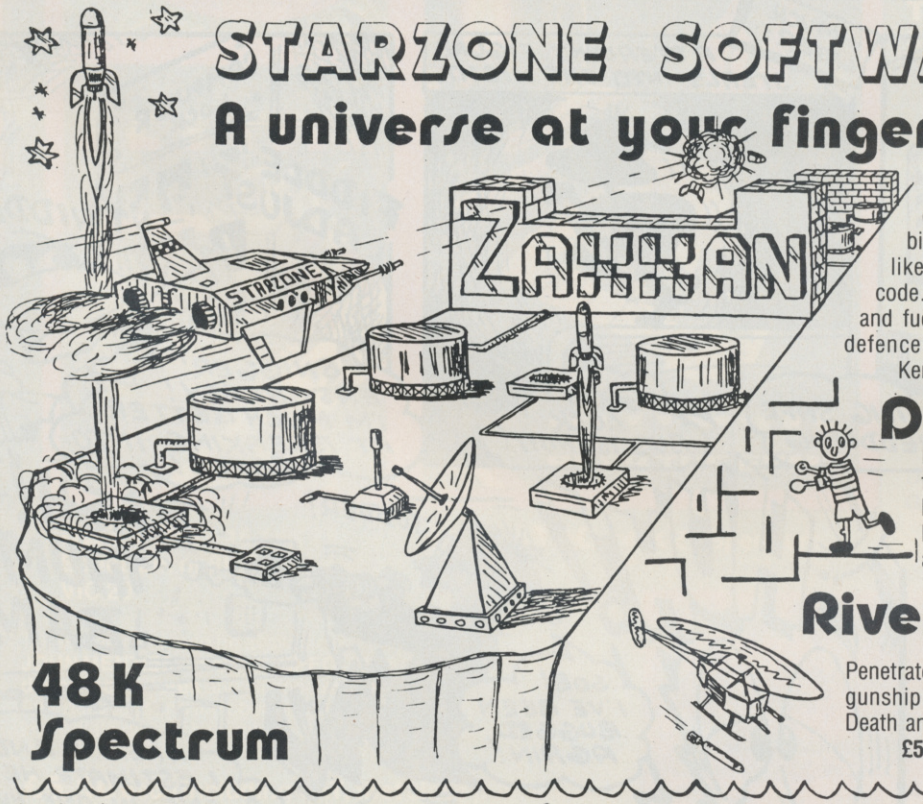

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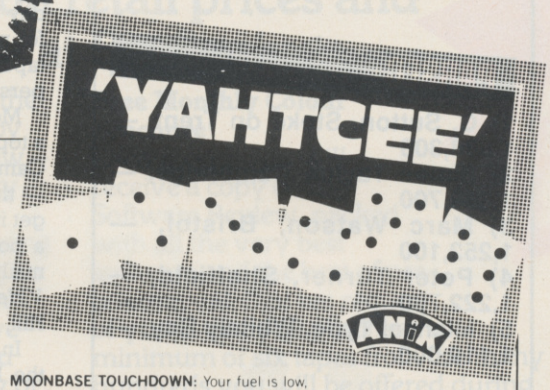

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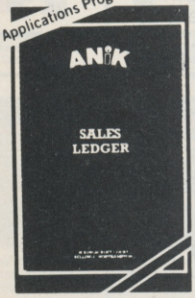

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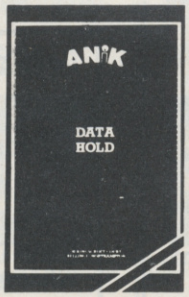

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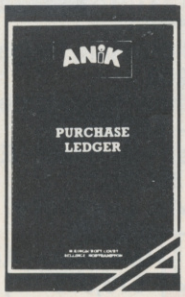

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ARCADIA

One of the best selling games around from Imagine. You can enter on the Spectrum or Vic versions — but don't forget to tell us which?

JET-PAC

The game that made Ultimate a top name in the world of games software overnight and which is rapidly becoming a cult game. For the Spectrum and Vic.

DIAMOND

English Software have high hopes for this mining game and are even offering a diamond as a prize! For the Atari owner.

KRAZY KONG

The best version of Donkey Kong we've seen for the Vic. From Anirog.

VIOLENT UNIVERSE

From Quest, the company who have developed a high score verification system for their Spectrum games.

MANIC MINER

Sheer addiction for the Spectrum from the Bug Byte people.

SPLAT

Help Zippy survive in this extremely playable game from new games company Incentive Software.

ZALAGA

Space age action from Ardvark for the BBC.

ATIC ATAC

A great new graphic adventure-style game from Ultimate.

3D DEFENDER

Malcolm Evans' game for New Generation Software which set new standards for graphics on the ZX81.

(On Violent Universe, please send your high scores direct to Quest at the address on the cassette inlay and NOT to *C&VG*. Quest have their own way to verify scores.)

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2) J. Denning, Amersham, Bucks — 4,918,595
3) Roger Sayle, Folkestone, — 4,568,945
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MANIC MINER

1) Julian Rignall, Dyfed, Wales, — 2,000,923
2) Stephen Lynch, Wallasey, Merseyside, — 1,763,590
3) A. Pritchard, Newark, Notts — 1,150,723
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5) Grant Harrison, Sidcup, Kent, — 716,225

PARSEC

1) C. Sutton, Stoke on Trent, — 1,588,300
2) Simon Taylor, Cambridge, — 1,358,700
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KRAZY KONG

1) Phillip Waterhouse, Bury, — 244,040
2) Andrew Chader, Nottingham, 172,740
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4) Matthew Brown, Exeter, 153,580
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You can spot *Computer and Video Games* **Hall of Fame** cassettes in your local computer store because we've had some special stickers printed which the software companies are sticking on to our *C&VG* approved games.

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In the New Year we'll invite some of the best top scorers along to a grand finals to prove their skills in the spotlight. In the meantime we'll be printing the top five scorers in our **Hall of Fame** selection each issue.

And each month we've got a *C&VG* "The Champ" t-shirt to give away to the top scorer on each game featured on this page. Your score doesn't have to be better than the one we printed the issue before — it simply has to be the highest we've received in time for our current issue's deadline.

We'd also like to hear from you if your favourite game isn't included in the **Hall of Fame** line-up. Maybe you'll persuade us to squeeze it in!

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Game .....
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Witness's name .....

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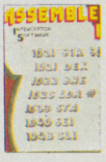

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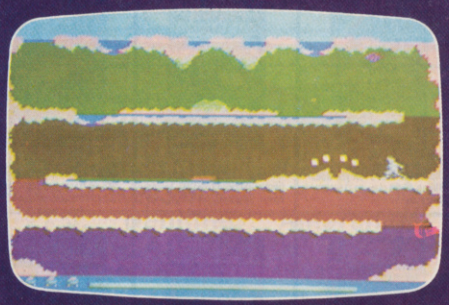

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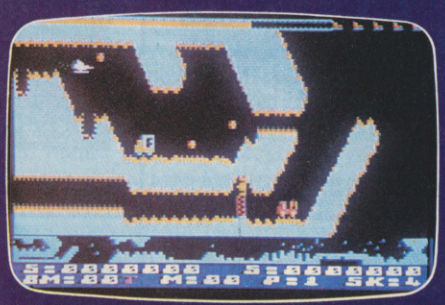

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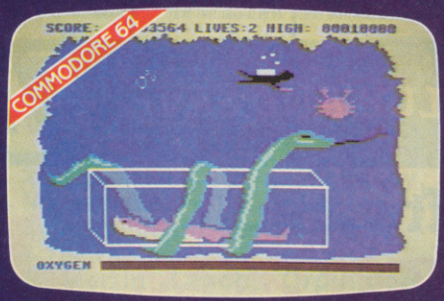

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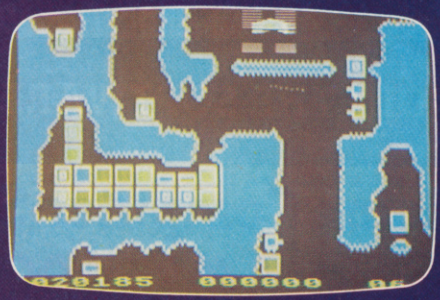

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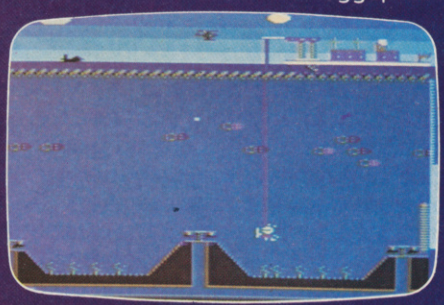

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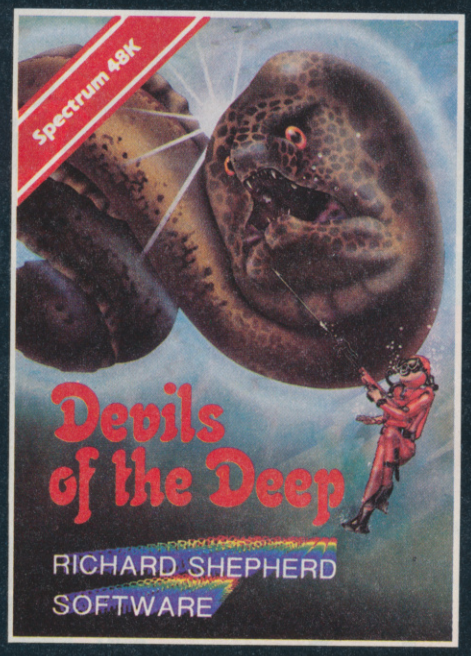

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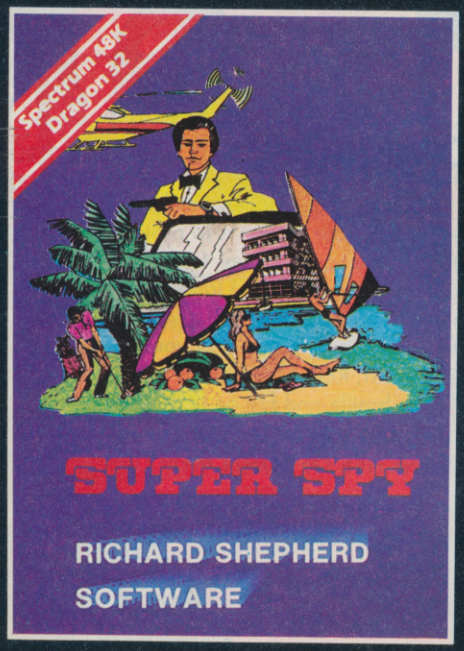

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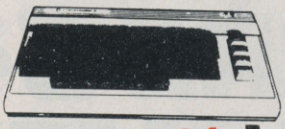

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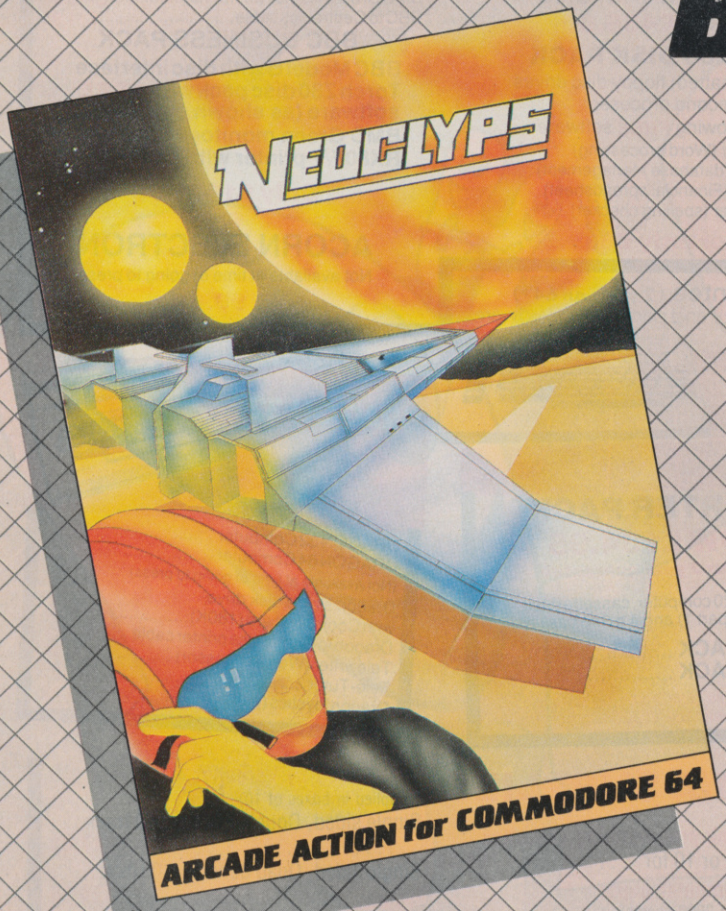

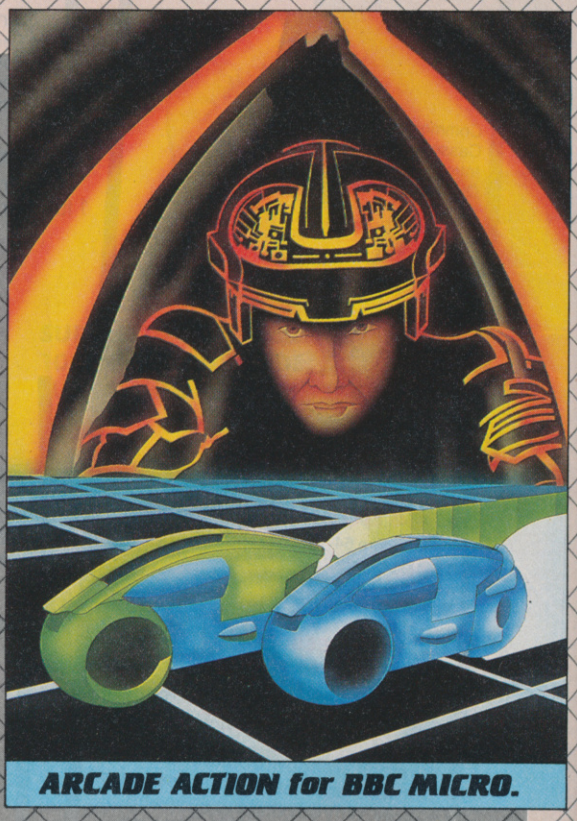

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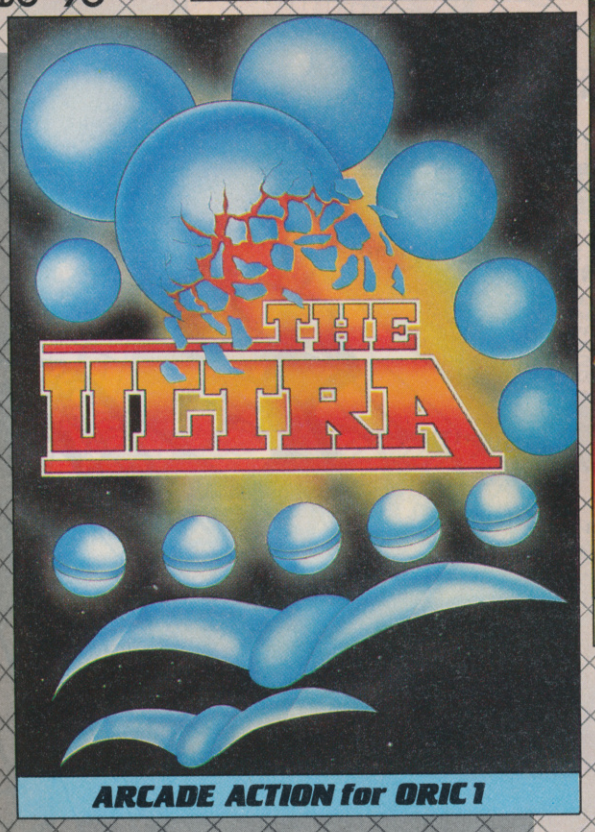

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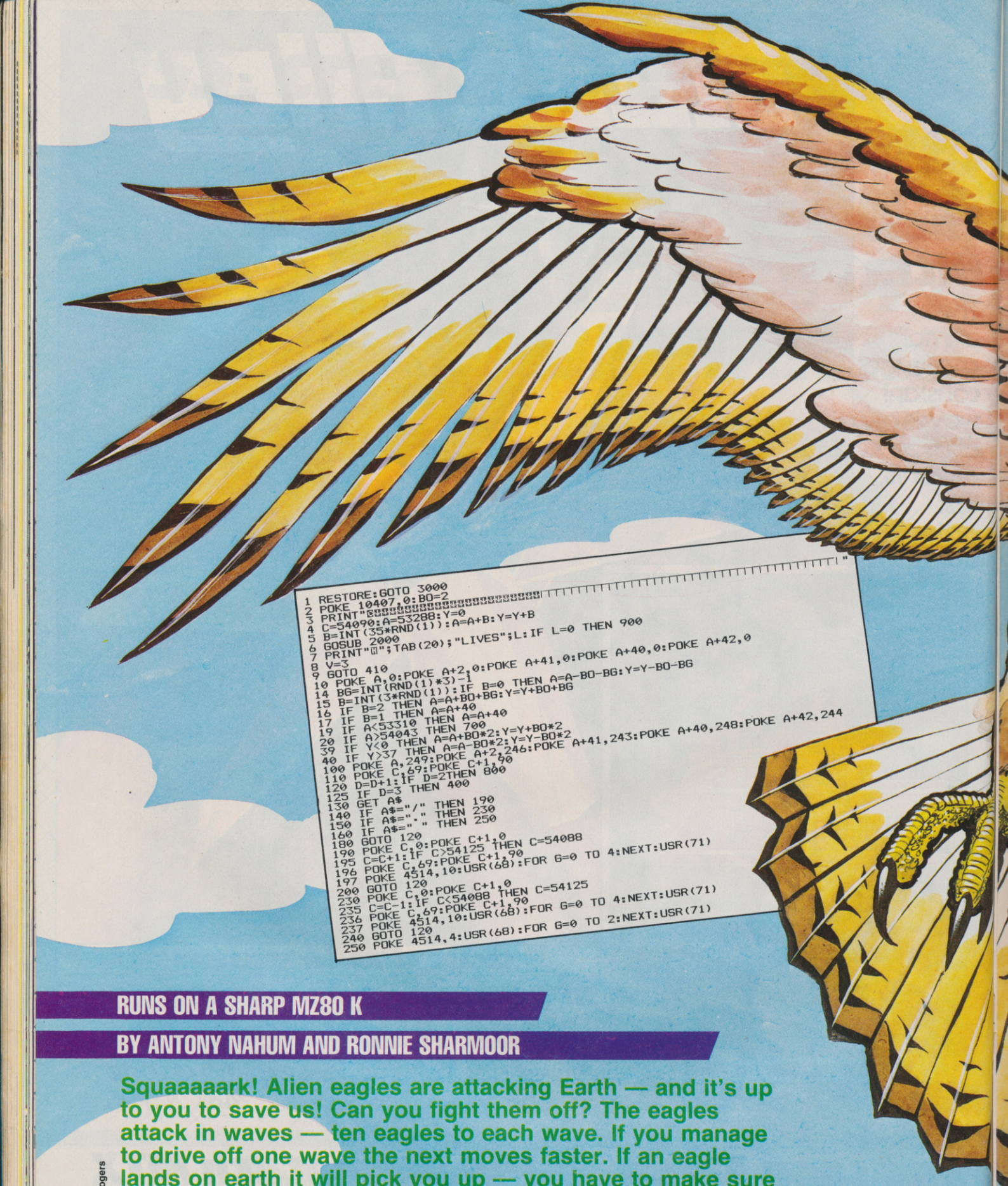

```
1 RESTORE:GOTO 3000
2 POKE 10407,0:BO=2
3 PRINT"[graphics]"
4 C=54090:A=53288:Y=0
5 B=INT(35*RND(1)):A=A+B:Y=Y+B
6 GOSUB 2000
7 PRINT"[graphics]";TAB(20);"LIVES";L:IF L=0 THEN 900
8 V=3
9 GOTO 410
10 POKE A,0:POKE A+2,0:POKE A+41,0:POKE A+40,0:POKE A+42,0
14 BG=INT(RND(1)*3)-1
15 B=INT(3*RND(1)):IF B=0 THEN A=A-BO-BG:Y=Y-BO-BG
16 IF B=2 THEN A=A+BO+BG:Y=Y+BO+BG
17 IF B=1 THEN A=A+40
19 IF A<53310 THEN A=A+40
20 IF A>54043 THEN 700
39 IF Y<0 THEN A=A+BO*2:Y=Y+BO*2
40 IF Y>37 THEN A=A-BO*2:Y=Y-BO*2
100 POKE A,249:POKE A+2,246:POKE A+41,243:POKE A+40,248:POKE A+42,244
110 POKE C,69:POKE C+1,90
120 D=D+1:IF D=2THEN 800
125 IF D=3 THEN 400
130 GET A$
140 IF A$="/" THEN 190
150 IF A$="." THEN 230
160 IF A$="," THEN 250
180 GOTO 120
190 POKE C,0:POKE C+1,0
195 C=C+1:IF C>54125 THEN C=54088
196 POKE C,69:POKE C+1,90
197 POKE 4514,10:USR(68):FOR G=0 TO 4:NEXT:USR(71)
200 GOTO 120
230 POKE C,0:POKE C+1,0
235 C=C-1:IF C<54088 THEN C=54125
236 POKE C,69:POKE C+1,90
237 POKE 4514,10:USR(68):FOR G=0 TO 4:NEXT:USR(71)
240 GOTO 120
250 POKE 4514,4:USR(68):FOR G=0 TO 2:NEXT:USR(71)
```

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Illustration: Terry Rogers

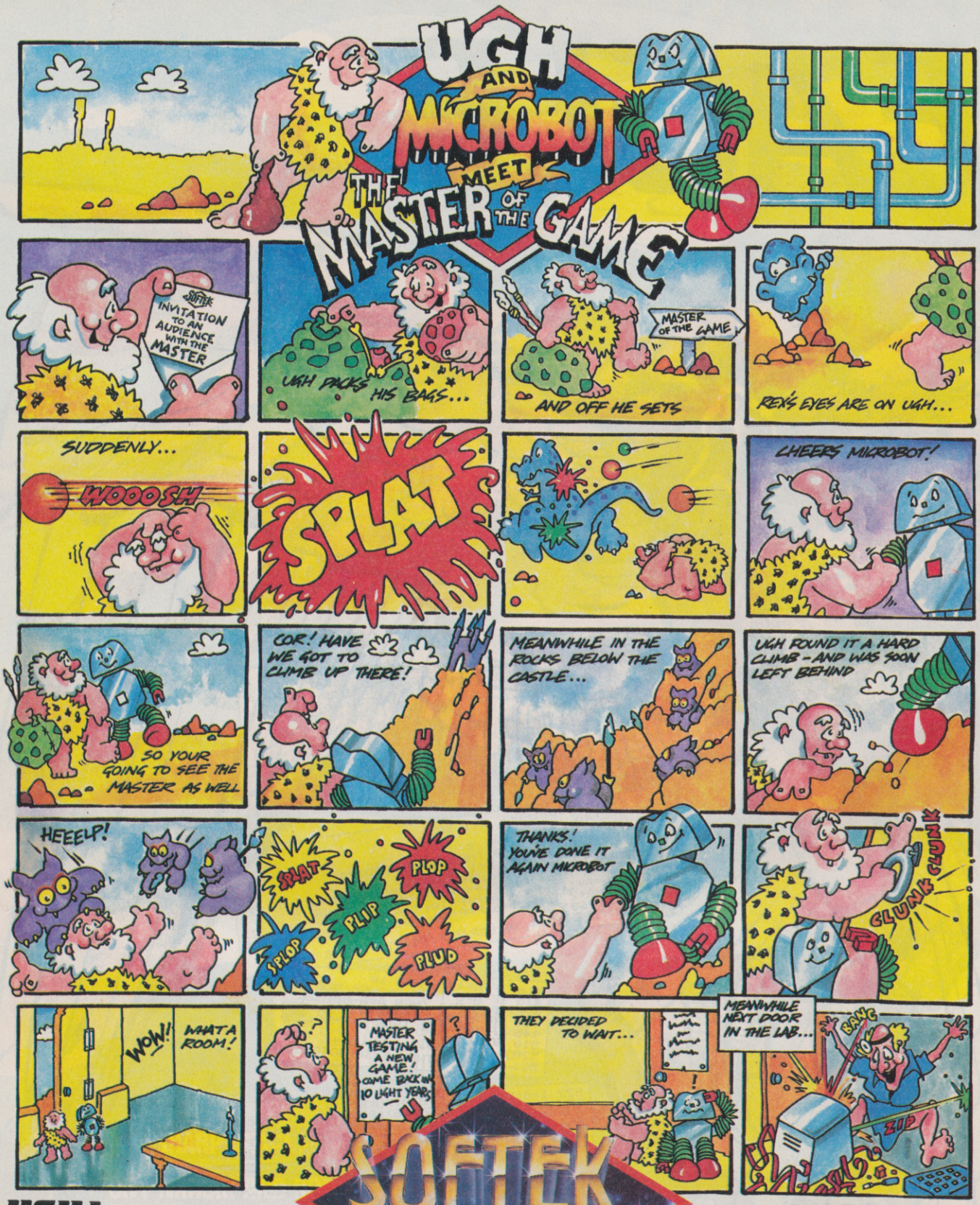
EAGLE


```
252 POKE C,160:POKE C+1,167
255 S=C-40
260 POKE S,0:POKE S+1,0
261 S=S-40:IF S<A-40 THEN GH=0:GOTO120
262 POKE S,113:POKE S+1,61
265 IF S+1=A THEN T=6:P=P+10:VD=VD+1:GH=0:GOTO 521
266 IF S=A THEN T=6:P=P+10:VD=VD+1:GH=0:GOTO 521
267 IF S=A+1 THEN T=6:P=P+10:VD=VD+1:GH=0:GOTO 521
268 IF S=A+2 THEN T=6:P=P+10:VD=VD+1:GH=0:GOTO 521
280 GOTO 260
400 D=0:POKE 4514,10:USR(68):USR(71):GOTO 9
```

```
410 IF A+42<CTHEN 10
415 IF A=C THEN A=A-80:520
420 IF A=C+1 THEN A=A-80:520
430 IF A+2=C THEN A=A-80:520
440 IF A+2=C+1 THEN A=A-80:520
510 GOTO 10
520 L=L-1:P=P+10:VD=VD+1
521 IF T<>6 THEN F=30:GOTO 523
```

```
522 T=0:F=20:POKE S,0:POKE S+1,0
523 POKE 4514,F:USR(68):FOR X=0 TO 5:NEXT:USR(71)
525 POKE A,46:POKE A+1,46:POKE A+2,46
530 POKE A+40,46:POKE A+41,46:POKE A+42,46
540 POKE A+80,46:POKE A+81,46:POKE A+82,46
```

```
550 GOTO 1000
560 POKE A,249:POKE A+2,246:POKE A+41,243:POKE A+40,248:POKE A+42,244
570 IF A+40>C+1 THEN 580
575 GOTO 600
580 FOR Q=A+40 TO C STEP-1
581 POKE Q-40,249:POKE Q-38,246:POKE Q+1,243:POKE Q,248:POKE Q+2,244
582 FOR W=0 TO 100:NEXT
585 POKE Q-40,0:POKE Q-38,0:POKE Q+1,0:POKE Q,0:POKE Q+2,0
590 NEXT
595 GOTO 1300
600 FOR Q=A TO C-40
601 POKE Q,249:POKE Q+2,246:POKE Q+41,243:POKE Q+40,248:POKE Q+42,244
602 FOR W=0 TO 100:NEXT
605 POKE Q,0:POKE Q+2,0:POKE Q+41,0:POKE Q+40,0:POKE Q+42,0
610 NEXT
620 GOTO 1300
700 IF A+40=C THEN A=A-40:GOTO 520
710 IF A+40=C+1 THEN A=A-40:GOTO 520
720 IF A+41=C THEN A=A-40:GOTO 520
730 IF A+41=C+1 THEN A=A-40:GOTO 520
740 IF A+42=C THEN A=A-40:GOTO 520
750 IF A+42=C+1 THEN A=A-40:GOTO 520
760 GOTO 560
800 POKE A,252:POKE A+2,252:GOTO 130
900 A=53500
```



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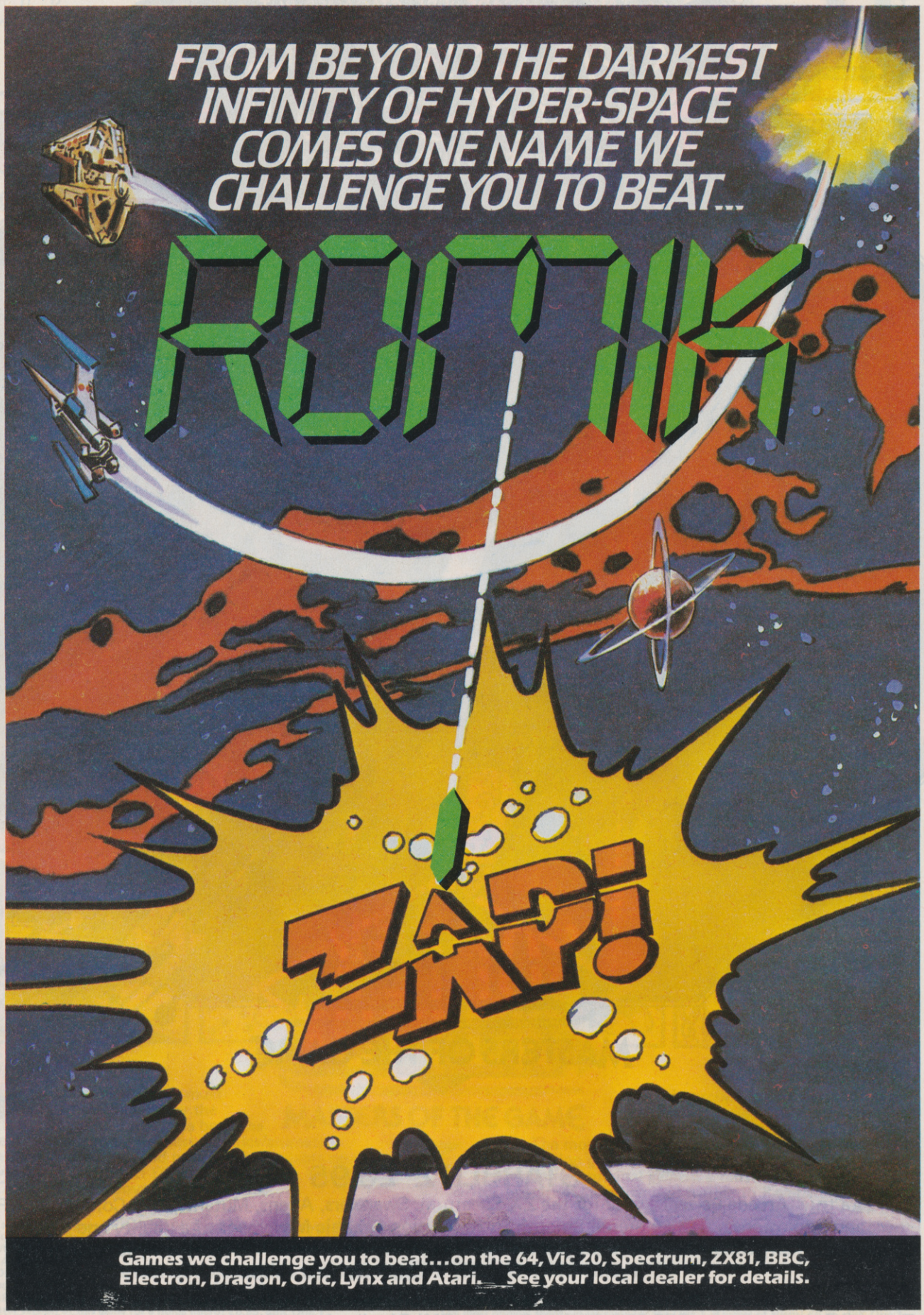
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```
910 POKE A,249:POKE A+2,246:POKE A+41,243:POKE A+40,248:POKE A+42,244
912 FOR F=0 TO 200:NEXT
915 POKE A,0:POKE A+2,0:POKE A+41,0:POKE A+40,0:POKE A+42,0
917 READ NM:POKE A,NM
919 A=A+1:IF A=53509 THEN 6000
920 GOTO 910
1000 POKE A,0:POKE A+1,0:POKE A+2,0
1010 POKE A+40,0:POKE A+41,0:POKE A+42,0
1020 POKE A+80,0:POKE A+81,0:POKE A+82,0
1030 POKE C,0
1040 POKE C+1,0
1050 IF VD=10 THEN GOSUB 3300
1100 GOTO 4
1110 FOR Q=A+39 TO C STEP-1
1120 POKE Q,0
1130 NEXT
1140 POKE A,0:POKE A+2,0:POKE A+41,0:POKE A+40,0:POKE A+42,0
1200 GOTO 4
1300 VF=0:FOR VR=C-80 TO C-560 STEP-40
1302 ER=0
1305 POKE 4514,255:USR(68)
1310 POKE VR,249:POKE VR+2,246:POKE VR+41,243:POKE VR+40,248:POKE VR+42,244
1320 POKE VR+81,202
1330 FOR ZX=0 TO 270:NEXT
1335 POKE VR,0:POKE VR+2,0:POKE VR+41,0:POKE VR+40,0:POKE VR+42,0
1337 POKE VR+81,0
1338 USR(71)
1340 NEXT
1350 FG=54090
1360 XC=INT(36*RND(1))
1370 FG=FG+XC
1380 POKE FG,69:POKE FG+1,120:POKE FG+2,90
1390 POKE VR,249:POKE VR+2,246:POKE VR+41,243:POKE VR+40,248:POKE VR+42,244
1400 POKE VR+81,INT(RND(1)*4+202)
1405 IF BO>4 THEN OB=2:GOTO 1410
1407 OB=3
1410 ER=ER+1:IF ER=OB THEN 1460
1415 POKE 4514,150:USR(68)
1420 GET E$
1430 IF E$="/" THEN 1500
1440 IF E$="." THEN 1530
1445 FOR FR=0 TO 30:NEXT
1450 GOTO 1410
1460 IF VR>FG-100 THEN 1555
1465 ER=0:POKE VR+81,0:VR=VR+40
1470 IF VR=FG-120 THEN 1580
1490 GOTO 1400
1500 POKE VR+81,0:VR=VR+1
1510 POKE VR+81,INT(RND(1)*4+202)
1515 FOR HY=0 TO 100:NEXT
1520 GOTO 1410
1530 POKE VR+81,0:VR=VR-1:GOTO 1510
1540 POKE VR+81,INT(RND(1)*4+202)
1550 USR(71)
1552 C=VR+121
1555 IF VR=FG-120 THEN 1580
1560 L=L-1
1570 POKE VR+81,0
1575 GOTO 1600
1580 TEMPO 6
1585 POKE VR+81,202
1590 MUSIC"C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0"
1595 GOTO 3
1600 POKE VR+81,107
1605 POKE 4514,200:USR(68):FOR A=0 TO 100:NEXT:USR(71)
1610 GOTO 3
2000 POKE 53248,16:POKE 53250,9:POKE 53249,15:POKE 53251,14:POKE 53252,20
2010 POKE 53253,19:PRINT"■";TAB(6);P
2020 RETURN
3000 PRINT"■"
3005 TEMPO 5
3010 PRINT"■■■■■"
3020 PRINTTAB(7);"■■■ ■■■ ■■■ ■   ■■■"
3030 PRINTTAB(7);"■   ■ ■ ■   ■   ■"
3040 PRINTTAB(7);"■■  ■■■ ■   ■   ■"
3050 PRINTTAB(7);"■   ■ ■ ■ ■ ■   ■"
3060 PRINTTAB(7);"■■■ ■ ■ ■■■ ■■■ ■■■"
3065 PRINT
3070 FOR S=6 TO 26
3080 PRINT TAB(S);"■"
3090 PRINT"■■":MUSIC"-#B0":NEXT
3100 POKE 53853,170:POKE 53854,153
3110 FOR S=53935 TO 53954
3115 D=S-40
3120 READ C:POKE D,C+W:W=W-1:NEXT
3125 FOR F=0 TO 1500:NEXT
3127 GOSUB 5000
3130 CLR:L=3:GOTO 2
3300 BO=BO+1:VD=0:PH=PH+1
3400 PRINT"■■■■■■■■■■■■■■■■■■■■PHASE";PH;" COMPLETED"
3405 TEMPO 6
3407 MUSIC"R5R5R5"
3410 MUSIC"C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0C0-#B0"
3420 PRINT"■■■■■■■■■■■■■■■■■■■■                                    "
3430 RETURN
5000 PRINT"■"
5005 POKE 10407,184
5010 PRINT" Alien Eagles are attacking Earth.It is"
5020 PRINT"up to you to save us all.After every  "
5030 PRINT"ten Eagles the next ten move faster.If"
5040 PRINT"an Eagle lands on Earth,but not on you,"
5050 PRINT"it will lift and drop you.You will have"
5060 PRINT"to land on a platform or lose a life.If"
5070 PRINT"it lands on you,you will automatically"
5080 PRINT"lose a life."
5090 PRINT"■■■■■■■■■■■■■■■■GOOD LUCK!!!"
5095 PRINT"■          PRESS ANY KEY TO CONTINUE"
5100 GET A$:IF A$="" THEN 5100                                    "
5105 PRINT"■
5120 PRINT"SPACE - FIRE"
5130 PRINT"  .   - LEFT"
5140 PRINT"  /   - RIGHT"
5145 PRINT"■          PRESS ANY KEY TO CONTINUE"
5150 GET A$:IF A$="" THEN 5150
5160 RETURN
6000 REM
6010 PRINT"■■■■■■■■■■■■■■■■■■■■YOU HIT";P/10;" EAGLES"
6020 FOR AA=1 TO 1000:NEXT
6030 PRINT"■"
6035 A=53500
6040 POKE A,249:POKE A+2,246:POKE A+41,243:POKE A+40,248:POKE A+42,244
6042 FOR F=0 TO 200:NEXT
6045 POKE A,0:POKE A+2,0:POKE A+41,0:POKE A+40,0:POKE A+42,0
6047 READ NM:POKE A,NM
6049 A=A+1:IF A=53510 THEN 6140
6050 GOTO 6040
6140 GET A$:IF A$="Y" THEN RUN
6150 IF A$="N" THEN PRINT"■":END
6160 GOTO 6140
9000 DATA 18,47,21,139,133,141,147,150,151,151,10,113,12,14,60,29,145,153,167
9010 DATA 160,7,1,13,5,0,15,22,5,18
9020 DATA 16,12,1,25,0,1,7,1,9,14
```

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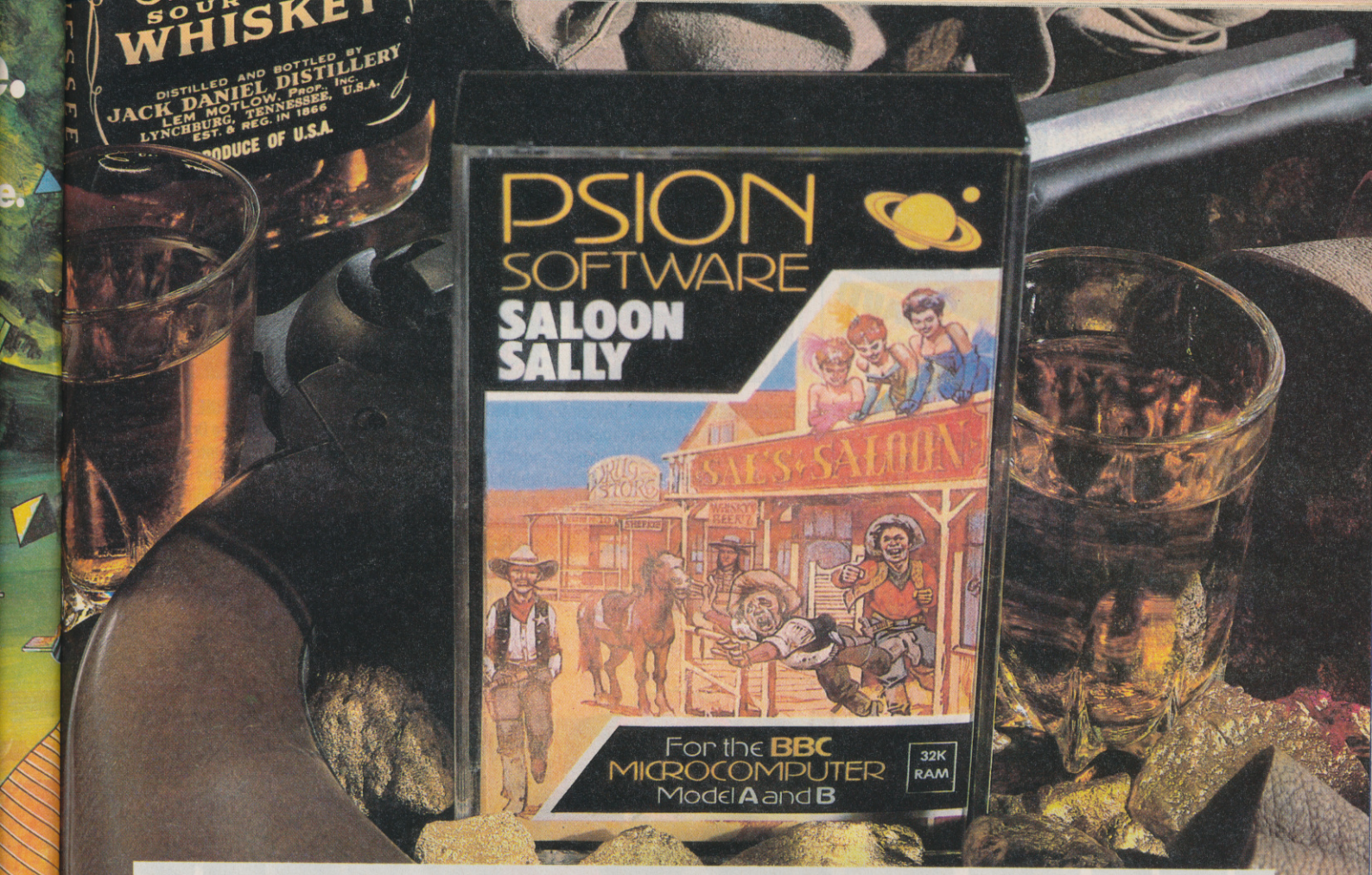

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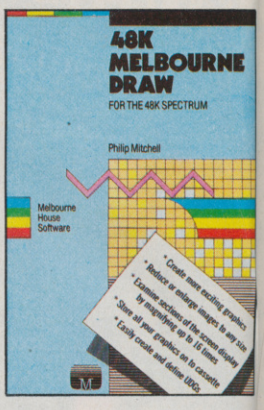

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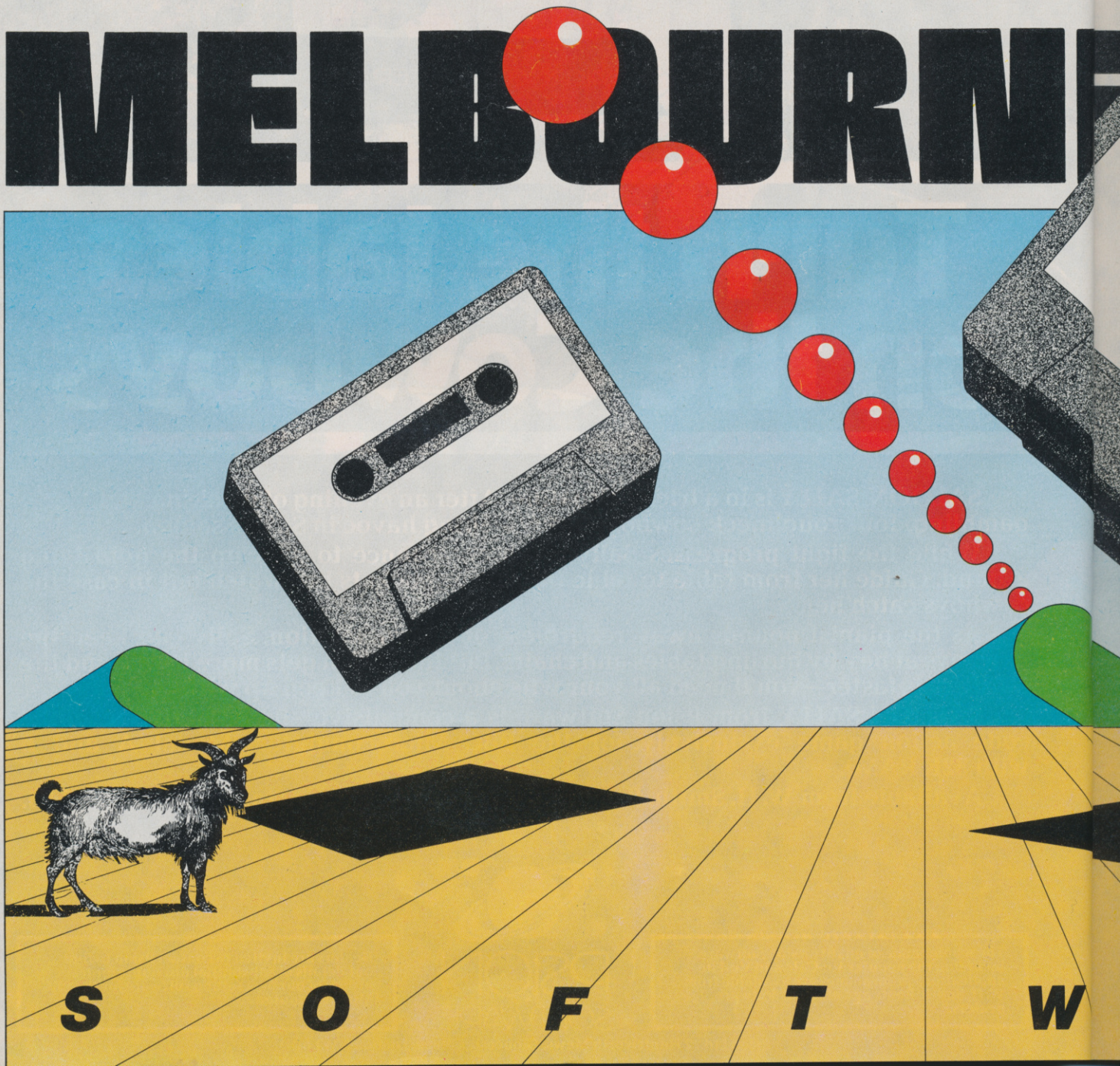

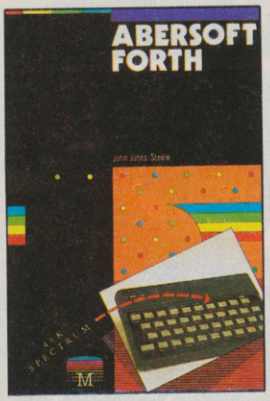

FORTH. Abersoft Forth is an implementation of the Forth Language for your Spectrum 48K. Forth is closer to Machine Code and more than 10 times faster than BASIC. "The only Spectrum package which has been endorsed by the Forth Interest group" — Sinclair User.

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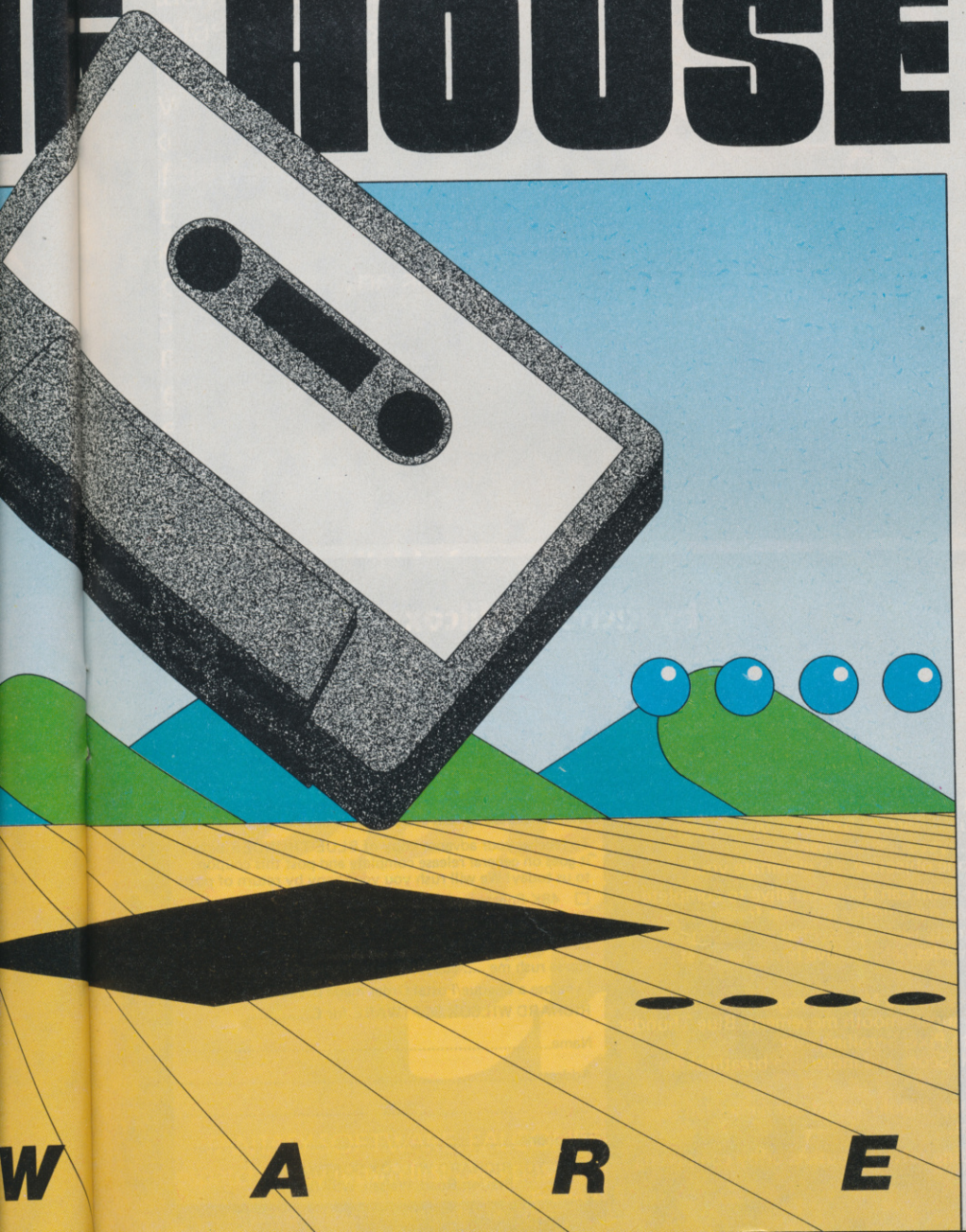
COMMODORE 64 HORACE GOES SKIING is the sequel to the very successful Hungry Horace. In this adventure our hero attemps winter sports. Skiing is complete with slalom flags, trees and moguls so watch our Horace!

HOUSE



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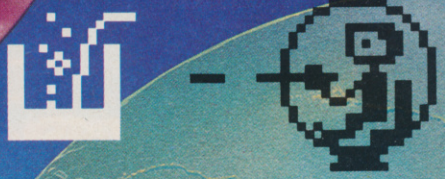
Scarthax has scoured the Universe to bring together the six ancient stones of lifeforce. United in Doomsday Castle they are being used to wield an irresistable power over the cosmos, emanating waves of corruption through every galaxy.

To save the Universe, you must battle your way through the Castle to find and collect the six stones and use their force against Scarthax to destroy Doomsday Castle, hopefully escaping yourself before the final cataclysmic explosion. The task is not easy (saving the Universe never is!) and it will take youmany games to unfold the structure of Doomsday Castle and discover the locations of the ancient stones. The addictive arcade style action will keep you coming back to play but the overall challenge should still keep you occupied for months.



You take on the role of our super hero ZIGGY shown here above in his exploratory capsule in combat with an Urk disguised as a pangalactic gargleblaster (!!) This is a true representation of the on-screen graphics.

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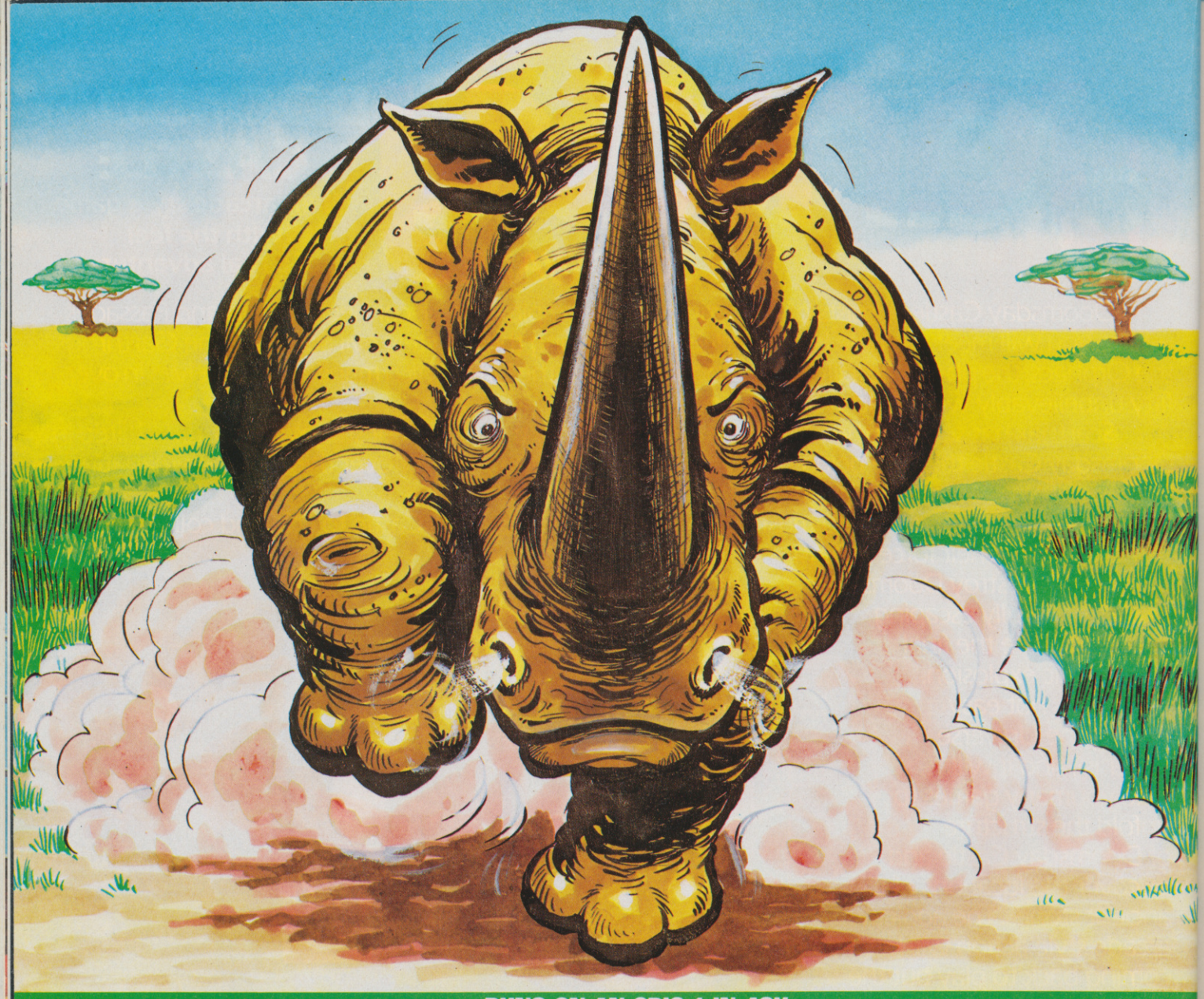

Illustration: Terry Rogers

RUNS ON AN ORIC-1 IN 48K

BY MICHAEL RUSSEL

Can you avoid the giant charging Rhino as it chases you through the forest? Well, if you can't, don't program in this game because you'll soon be in trouble! The object of the game is simple — dodge the Rhino!

You'll find yourself in the forest with a fierce horned animal bearing down on you — how long can you stay out in front? Your only hope of safety is the Missionary's hut — if you can reach it, the Rhino will be beaten — and you'll be ready for the next chase, when more Rhinos will be after you.

The density of the forest can be changed by altering line 10 and the ferocity of the Rhino in line 20. The initial number of Rhinos can be altered by changing line 25.

```
1 HIMEM#97FF
2 FORN=46360TO46375:READA:POKEN,A:NEXT
3 DATA0,1,62,20,20,20,20,20,30,30,12,63,12,12,18,33
4 POKE618,10:.PRINTCHR$(12):FORN=1TO4:PRINTCHR$(10):NEXT
5 FORN=1TO14:PRINTCHR$(9);:NEXT
6 PRINT"INSTRUCTIONS?":GETA$:IFA$="Y"THENGOSUB3000
7 POKE555,64
8 REM TYPE IN ALL 'PRINTS' AS '?'          THIS IS SHORTHAND FORM
9 POKE1293,96 'ENSURE LINE 0 IS INCLUDED-IF NOT THIS WILL CORRUPT L
INE 1.
10 D=450 'DENSITY OF FOREST
20 A=3  'FEROCITY OF RHINOS
25 R=1 'INITIAL NO. OF RHINOS
```

RHINO

```
26 REM R<1 THEN RANDOM NO. OF RHINOS
D<1 THEN RANDOM DEN. OF FOREST
27 IFR>10THENR=10
28 IFR<1THENR=INT(RND(1)*10)+1
29 IFD<1THEND=INT(RND(1)*1000)+1
30 PRINTCHR$(12)
35 PAPER4:INK3 'REPLACE THIS WITH:-
PAPER(R+1)AND7:INKRAND7-IF YOUR T.V.
36 REM CAN STAND IT!
40 FORN=1TO38:PLOTN,1,254:PLOTN,26,254:NEXT
50 FORN=1TO26:PLOT1,N,254:PLOT38,N,254:NEXT
60 FORN=0TOD:Q=INT(RND(1)*38)+1:W=INT( RND(1)*26)+1
:PLOTQ,W,254:NEXT
70 PRINTCHR$(11)"NO. OF RHINOS="R
80 FORN=3TO7:PLOT23,N,"          ":NEXT
90 PLOT26,5,"0"
100 X=INT(RND(1)*5)+2:Y=INT(RND(1)*5)+22
110 IFSCRN(X,Y)<>32THEN100
120 PLOTX,Y,164
130 P=R
135 GOTO150
140 P=P-1:IFP>=0THENGOSUB1000ELSEGOSUB1500
150 N=1
155 PLOTX,Y,164
160 X1=0:Y1=0:K$=KEY$
165 IFK$="T"THEN30
170 IFK$="D"THENX1=1
180 IFK$="A"THENX1=-1
190 IFK$="X"THENY1=1
200 IFK$="W"THENY1=-1
210 IFK$="E"THENX1=1:Y1=-1
220 IFK$="C"THENX1=1:Y1=1
230 IFK$="Z"THENX1=-1:Y1=1
240 IFK$="Q"THENY1=-1:X1=-1
245 IFSCRN(X+X1,Y+Y1)=48THEN300
250 IFSCRN(X+X1,Y+Y1)<>32THEN270
260 PLOTX,Y,32:X=X+X1:Y=Y+Y1
261 FORV=Y-2TOY+2:SOUND1,V,15:NEXT:SOUND1,1,0
270 N=N+1:IFN<=ATHEN155
275 PLOTX,Y,164
280 GOTO140
300 PLOTX,Y,32:PLOTX+X1,Y+Y1,64
301 FORN=0TO5:SOUND1,N,15:SOU^D1,RND(1)*150,15:NEXT
305 WAIT50:SOUND1,1,0
310 R=R+1
320 GOTO30
1000 R1(P)=(INT(RND(1)*36)+2):R2(P)=(INT(RND(1)*25)+2)
1010 IFSCRN(R1(P),R2(P))<>32THEN1000
1015 PLOTR1(P),R2(P),35
1016 U=P:GOSUB1505:CALL#F41B:RETURN
1500 U=0
1505 T=U
1510 M1=0:M2=0
1520 IFX<R1(T)THENM1=-1
1530 IFX>R1(T)THENM1=1
1540 IFY<R2(T)THENM2=-1
1550 IFY>R2(T)THENM2=1
1560 IFX<R1(T)+2ANDX>R1(T)-2THENGOSUB2000
1565 IFSCRN(R1(T)+M1,R2(T)+M2)<>32THEN1600
```

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Based on the best-selling Puffin book by John Astrop

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Based on the story by Colin Kapp

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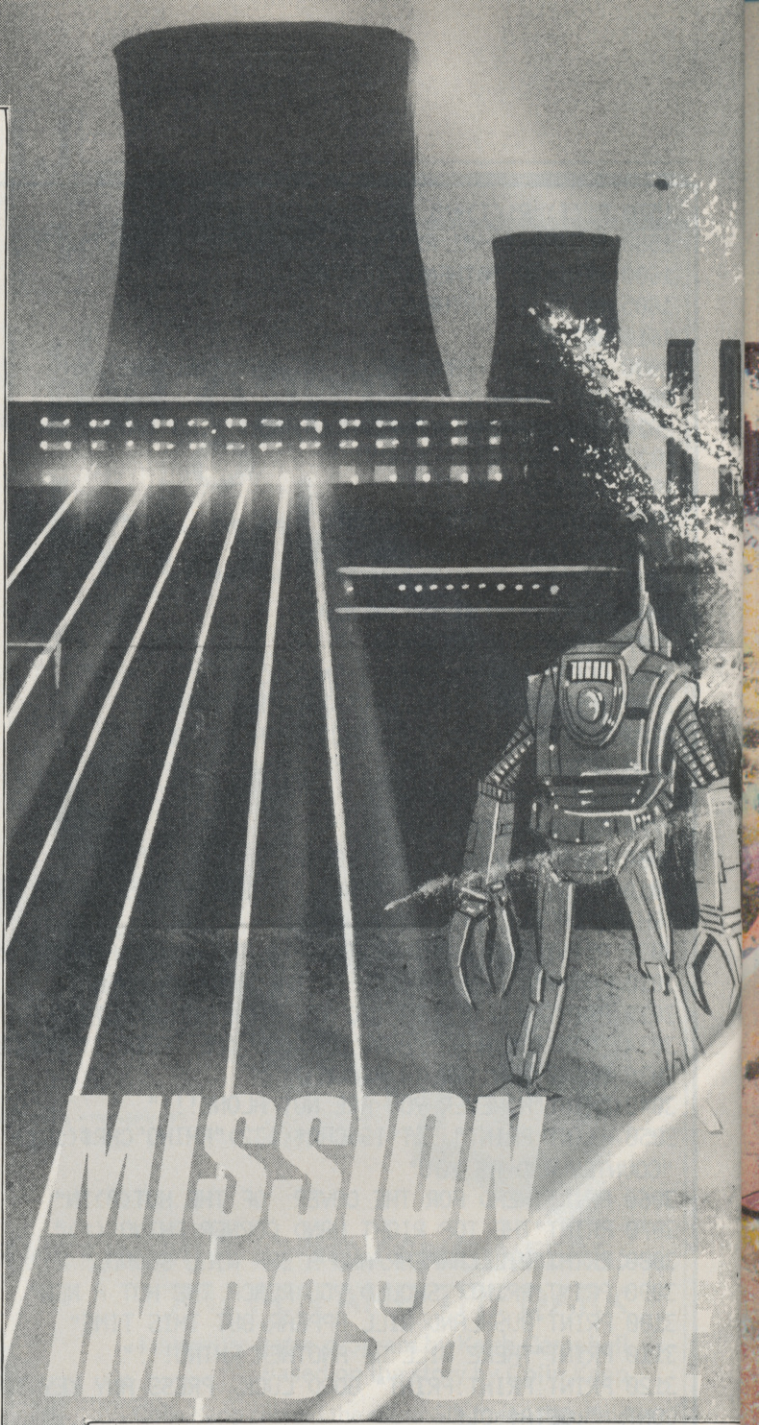
BOOKWARE

```
1570 R1(T)=R1(T)+M1:R2(T)=R2(T)+M2
1580 PLOTR1(T)-M1,R2(T)-M2,32:PLOTR1(T),R2(T),35
1600 IFM1*M2<>0THENGOSUB2700
1605 T=T+1:IFT<RTHEN1510
1610 RETURN
2000 IFY<R2(T)+2ANDY>R2(T)-2THEN2010ELSERETURN
2010 POP:PLOTX,Y,37
2020 FORN=0TO200:SOUND1,N,15:NEXT:PING
2022 WAIT70
2025 SOUND1,1,0
2030 PLOT13,13,"GAME OVER"
2040 PLOT11,14,"ANOTHER GAME?"
2050 PLOT14,15,"(Y OR N)"
2060 A$=KEY$:IFA$="Y"THEN10
2070 IFA$<>"N"THEN2060
2080 CLEAR:CLS:POKE618,3:END
2700 IFSCRN(R1(T)+M1,R2(T))=32THEN2760
2720 IFSCRN(R1(T),R2(T)+M2)=32THEN2770
2730 RETURN
2760 POP:M2=0:GOTO1560
2770 POP:M1=0:GOTO1560
3000 PRINTCHR$(12):INK3:PAPER0
3010 PRINT"           "CHR$(27)CHR$(4)"J>>>"CHR$(132)
"RHINO"CHR$(131)"<<<"CHR$(4)
3020 PRINT:PRINT:PRINT" THIS IS THE GAME OF RHINO. YOU ARE"
3030 PRINT"A MAN TRAPPED IN THE AFRICAN BUSH."
3032 PRINT"YOU ARE TRYING TO REACH THE SAFETY"
3034 PRINT"OF A HUT. MOVE THROUGH THE TREES ("CHR$(254)")
3036 PRINT"AND TRY TO REACH IT."
3040 PRINT"HOWEVER YOU ARE NOT ALONE!!!"
3050 PRINT:PRINT" IT IS"CHR$(132)"RHINO"CHR$(131)
"COUNTRY AND AS YOU"
3060 PRINT"HEAD FOR THE COVER. OF THE HUT(0)IN"
3070 PRINT"THE TOP RIGHT HAND CORNER,RHINO (#)"
3080 PRINT"WILL APPEAR,AND A ZAP WILL SOUND."
3090 PRINT:PRINT" SHOULD YOU REACH THE HUT A NEW"
3100 PRINT"BUSHLAND WILL APPEAR,BUT THIS TIME"
3110 PRINT"THERE WILL BE ANOTHER RHINO!!!"
3120 PRINT:PRINT:PRINT" GOOD LUCK. PRESS ANY KEY TO
CONT. ":GETA$:CLS
3121 PRINT
3122 PRINT"SHOULD YOU GET TRAPPED    E.G."CHR$(254)
CHR$(254)CHR$(254)
3124 PRINT"PRESS"CHR$(134)"'T'"CHR$(131)"FOR ANOTHER
MAZE    "CHR$(254)"$"CHR$(25^)
3125 PRINT"                                  "CHR$(254)
CHR$(254)CHR$(254):PRINT
3130 PRINT"         "CHR$(130)"KEYS
3140 PRINT"         "CHR$(133)"====
3150 PRINT
3160 PRINT"        Q  W  E
3170 PRINT"         \ \ /
3180 PRINT"        A-"CHR$(129)"$"CHR$(131)"-D
3190 PRINT"         / \ \
3200 PRINT"        Z  X  C
3210 PRINT:PRINT"    "CHR$(27)"LANY KEY TO BEGIN":GETA$
3220 RETURN
```

RHINO

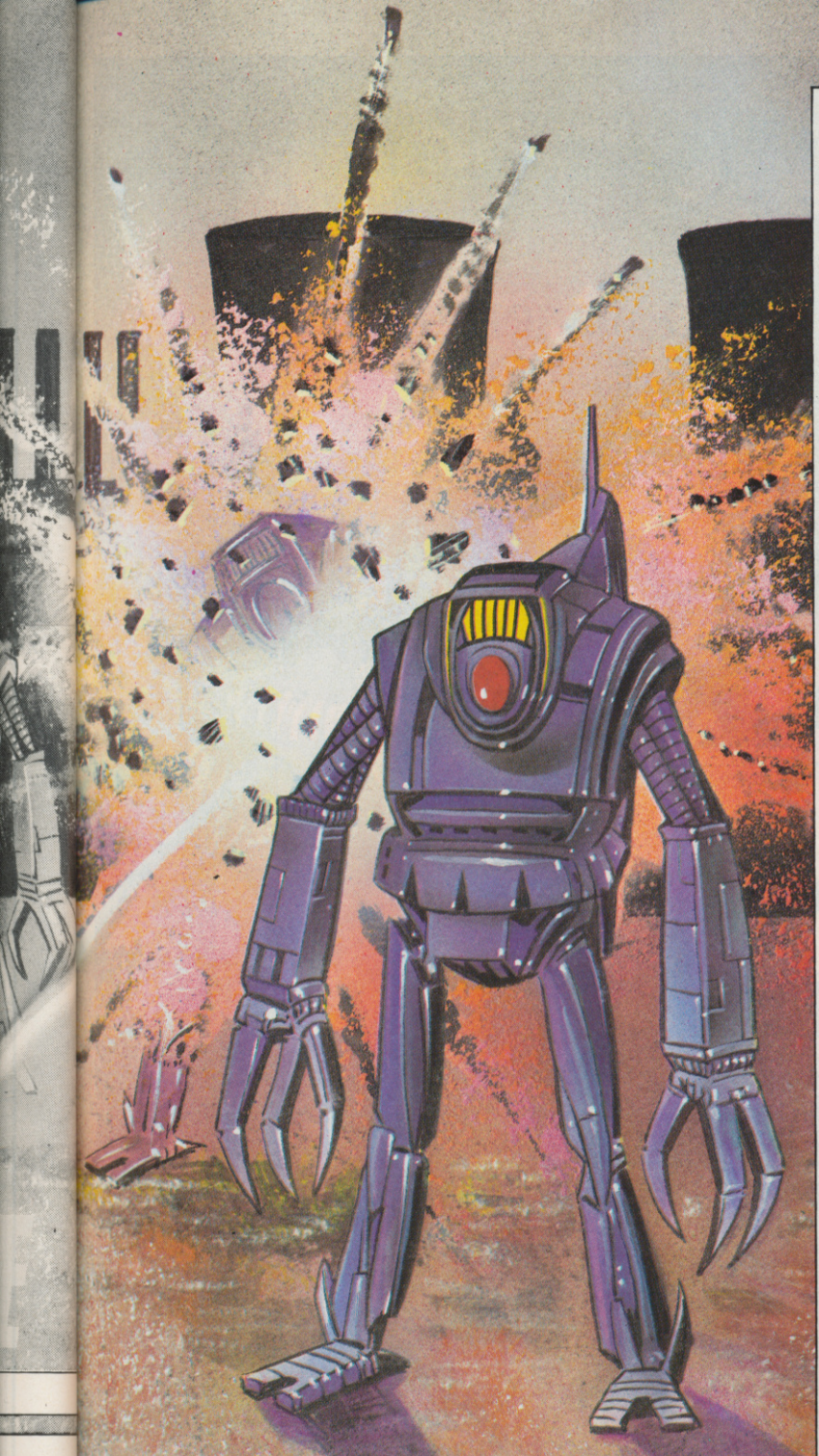


MISSION IMPOSSIBLE

BY DAVID HEALEY

RUNS ON A SPECTRUM IN 48K

```
 110 LET l=-1
 120 LET m=0
 500 GO SUB 9500
 510 GO TO 9820
1000 GO SUB j
1010 IF INT (RND*rc)=1 THEN LET
l=l+1: IF l>1 THEN LET l=-1
1020 GO SUB 3100+(100*l)
1030 GO SUB j
1040 GO SUB 3500
1500 GO TO 1000
2000 IF INKEY$="5" THEN GO TO 25
00
2010 IF INKEY$="6" THEN GO TO 26
00
2020 IF INKEY$="7" THEN GO TO 27
00
2030 IF INKEY$="8" THEN GO TO 28
00
2040 RETURN
2050 IF IN 31=2 THEN GO TO 2500
2060 IF IN 31=4 THEN GO TO 2600
2070 IF IN 31=8 THEN GO TO 2700
2080 IF IN 31=1 THEN GO TO 2800
2090 RETURN
2500 LET nx=nx-1
2515 IF ATTR (ny,nx)=57 THEN GO
TO 2550
2520 PRINT INK c;AT ny,nx+1;"▲";
: BEEP .05,-8: PRINT AT ny,nx;"
"; INK 7;AT ny,nx+1;" ": BEEP .0
5,-3: PRINT INK c;AT ny,nx;"▲"
2525 RETURN
2550 LET nx=nx+1: RETURN
2600 LET ny=ny+1
2603 IF ATTR (ny,nx)=63 THEN GO
TO 2620
2605 IF ATTR (ny,nx)=56 THEN GO
TO 5000
2615 IF ATTR (ny,nx)=57 OR 52 TH
EN GO TO 2650
2620 PRINT INK c;AT ny-1,nx;"▲";
AT ny,nx;"▼": BEEP .05,-8: PRINT
 INK c;AT ny-1,nx;" ";AT ny,nx;"
▲": BEEP .1,-8: PRINT INK 7;AT n
y-1,nx;" "; INK c;AT ny,nx;"▲"
2625 RETURN
2650 LET ny=ny-1: RETURN
2700 LET ny=ny-1
2710 IF ATTR (ny,nx)=187 THEN GO
 SUB 5200
2715 IF ATTR (ny,nx)=57 THEN GO
TO 2750
2720 PRINT INK c;AT ny,nx;" ";AT
 ny+1,nx;"▲": BEEP .05,-8: PRINT
 AT ny,nx;"▼";AT ny+1,nx;" ": BE
EP .1,-3: PRINT INK 7;AT ny+1,nx
;" "; INK c;AT ny,nx;"▲"
2725 RETURN
2750 LET ny=ny+1: RETURN
2800 LET nx=nx+1
2815 IF ATTR (ny,nx)=57 THEN GO
TO 2850
2820 PRINT INK c;AT ny,nx-1;"▼":
 BEEP .05,-8: PRINT INK 7;AT ny,
nx-1;" "; INK c;AT ny,nx;"▼": BE
EP .05,-3: PRINT INK c;AT ny,nx;
"▲"
2825 RETURN
2850 LET nx=nx-1: RETURN
3000 LET hx=16*(INT (RND*13))+27
3010 INK 2: PLOT hx,32: DRAW 0,1
19: BEEP .07,30: INK 7: PLOT hx,
32: DRAW 0,119
3020 IF nx<>INT (hx/8) THEN RETU
RN
3025 IF ny<3 OR ny>17 THEN RETUR
N
3030 LET m=m+1
3040 IF m<3 THEN GO TO 4700
3070 GO TO 3225
3100 FOR x=1 TO 10: NEXT x
3110 RETURN
3200 LET hy=2*INT (RND*7)+3
3210 PRINT INK 4;AT hy,2;"▀▀▀▀▀▀
▀▀▀▀▀▀
```



Nuclear power stations and men don't mix. There is always the danger of exposure to radiation or human error that can cause catastrophic results. There is also the danger of sabotage or terrorist action.

The solution to all these problems was the Manson Green Automated Nuclear Power Station. It is run by robots and a laser defence system keeps out unwanted visitors. It all worked perfectly — until now!

There has been a malfunction and the defence mechanisms are preventing anyone getting in to solve the problem! Your job is to save the power station by collecting the fuel rods and storing them in lead-lined containers.

The rods are at the top of the screen and can be recognised by the flashing radiation warning indicators attached to them. You have to collect the rods, one at a time, and transport them to the base of the screen where you'll find a corridor full of lead-lined containers.

But all the time the laser defence system will be attempting to blast you!

You can play the game using the keyboard or Kempston joystick. Further instructions are included in the program.

```
4060 PRINT "Mission success:
     ";INT (rs/14*100);"%": BEEP
 .1,0: PRINT : PRINT : PRINT : P
RINT
4070 PRINT "Press:": PRINT : PRI
NT "1: For mission instructions.
": PRINT "2: To start.": BEEP .1
,0
4080 IF INKEY$="1" THEN GO TO 92
00
4090 IF INKEY$="2" THEN GO TO 90
00
4100 GO TO 4080
4700 FOR q=1 TO 10: PRINT AT ny,
nx; INK 6;"▲"; INK 2;AT ny,nx;"▲
": BEEP .02,q: NEXT q:
4705 PRINT INK 7; PAPER 0;AT 0,2
;"OPERATIVE INJURED.PRESS 'X';A
T 21,0;"FOR MEDICAL ATTENTION &
RE-START": BEEP .1,0
4710 IF INKEY$="x" THEN GO TO 47
40
4720 GO TO 4710
4730 CLS : GO TO 9010
4740 PRINT INK 1;AT 0,0;"
4745 PRINT INK 1;AT 21,0;"
4750 BORDER 0: PRINT AT ny,nx; I
NK c;"▲": GO TO 1000
5000 IF c<>3 THEN GO TO 5100
5010 LET c=0: LET rc=rc-1
5020 FOR x=-40 TO 40 STEP 10
5030 PRINT INK 2;AT ny,nx;"⊠"
5040 LET ny=ny-1
5050 PRINT INK c;AT ny,nx;"▲"
5060 LET rs=rs+1
5070 IF rs=14 THEN GO TO 6000
5080 RETURN
5100 LET ny=ny-1: RETURN
5200 IF c=3 THEN GO TO 5300
5210 LET c=3
5220 FOR x=1 TO 7: PRINT INK x;A
T ny,nx;"■": BEEP .5,8*x: NEXT x
5225 RETURN
5300 LET ny=ny+1: RETURN
6000 PAUSE 100
6010 PAPER 7: INK 1: BORDER 2: B
RIGHT 1: CLS
6020 PRINT "MISSION COMPLETED:":
 BEEP .1,10: PRINT
6030 PRINT "All rods recovered.
           Station now safe.
           Congratulations.": B
EEP .1,10
6040 PRINT : PRINT : PRINT : PRI
NT : PRINT : PRINT : PRINT
6050 GO TO 4070
9000 PAPER 7: BRIGHT 0: CLS
9005 LET c=0: LET ny=19: LET nx=
15: LET rs=0: LET gx=4: LET m=0:
 LET rc=17
9010 PRINT INK 1;"
9020 PRINT INK 1;"■": FOR x=2 T
O 28 STEP 2: PRINT AT 1,x; INK 3
; FLASH 1;"◆"; INK 1; FLASH 0;"■
": NEXT x: PRINT AT 1,30; INK 1;
"■"
9030 PRINT INK 1;"■"; INK 7;"
                          "; INK
1;"■■■"
9035 FOR y=3 TO 15 STEP 2: PRINT
 AT y,0; INK 1;"■►"; INK 7;"
                          "; INK 1;
"◄■": PRINT AT y+1,0; INK 1;"■■
■": FOR x=3 TO 25 STEP 2: PRINT
AT y+1,x; INK 7;" "; INK 1;"■";
 NEXT x: PRINT INK 7;" "; INK 1;
"■■■": NEXT y
9040 PRINT INK 1;"■"; INK 7;"
                          "; INK
 1;"■■■"
9045 PRINT INK 1;"■"; INK 7;" ";
 INK 1;"■▲■▲■▲■▲■▲■▲■▲■▲■▲■▲■
▲■"; INK 7;" "; INK 1;"■■"
9050 PRINT INK 1;"■"; INK 7;"
                          "; INK
 1;"■■■"
9055 PRINT INK 1;"■■": FOR x=2 T
O 28 STEP 2: PRINT AT 20,x; INK
0;"◆"; INK 1;"■": NEXT x: PRINT
AT 20,30; INK 1;"■■"
9060 PRINT INK 1;"
9070 PRINT INK c;AT ny,nx;"▲"
9080 GO TO 1000
9199 STOP
9200 CLS
9205: INK 6: PAPER 0: BORDER 0:
CLS
```

Illustration: John Higgins

Take a giant step closer to reality with New Generation Software. The 3D Graphics of New Generation programs bring the screen alive and makes other games look as flat as snakes and ladders.

Spectrum owners will find that seeing is believing when they open the door on 'THE CORRIDORS OF GENON', the latest creation from New Generation. You will be saving the Universe from the evil that now controls all things. But beware – the sound of footsteps approaching could be Bogul!

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Personal Computer News (15-21 Sept '83) gave SUPER SKRAMBLE! an overall rating of NINETEEN OUT OF TWENTY and described it as: "Well implemented with beautifully smooth scrolling and very nice graphics."

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"... a compelling piece of frivolity that could give hours of fun." was the verdict of Personal Computer News (22-28 Sept '83).

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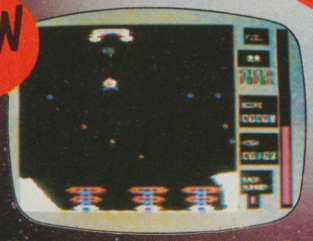

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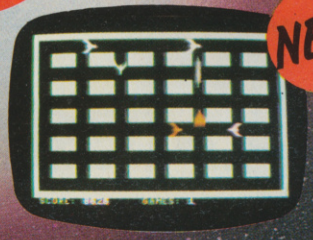

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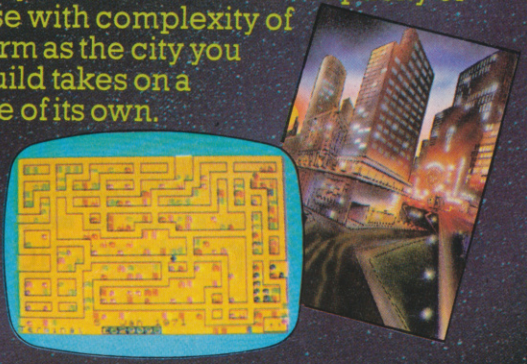

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```
9210 PRINT "LOCATION:": BEEP .5,
10
9215 PRINT
9220 PRINT "A FULLY AUTOMATED NU
CLEAR POWER STATION PATROLLED BY
 GUARDIAN    ROBOTS AND PROTECTED
 BY A LASER DEFENCE MECHANISM.":
 BEEP .5,10
9225 PAUSE 600
9230 CLS
9235 PRINT "PROBLEM:": BEEP .5,1
0
9240 PRINT
9245 PRINT "FUEL ROD HANDLING MA
LFUNCTION.   ALL RODS EXPOSED.
             TIME TO CRITICAL RAD
IOACTIVE     RUNAWAY CONDITION: U
NKNOWN": BEEP .5,10
9250 PAUSE 600
9255 CLS
9260 PRINT "MISSION:": BEEP .5,1
0
9265 PRINT
9270 PRINT "YOUR MISSION SHOULD
YOU DECIDE  TO TAKE IT IS TO ENT
ER THE POWERSTATION AND MOVE THE
 FUEL RODS  INTO PROTECTIVE LEAD
 CONTAINERS.": BEEP .5,10
9275 PAUSE 800
9280 CLS
9285 INK 5
9290 PRINT "TOP SECRET": BEEP .5
,10
9295 PRINT
9300 PRINT "BRIEF:": BEEP .5,10
9305 PRINT
9310 PRINT "1: The fuel rods are
 located at the top of the scree
n and can berecognised easily as
 they have   flashing radiation w
arning      indicators attached.
": BEEP .5,10
9315 PRINT
9320 PRINT "2: The lead containe
rs are      situated in a corrid
or at the   base of the screen."
: BEEP .5,10
9325 PRINT
9330 PRINT "3: You must transpor
t the rods  to these containers
avoiding thelaser fire and guard
ian robot.": BEEP .5,10
9340 PRINT : PRINT
9345 PRINT "Press X to select co
ntrols."
9350 IF INKEY$="x" THEN GO TO 93
60
9355 GO TO 9350
9360 CLS : INK 7
9365 PRINT "CONTROL SELECTION:"
9370 PRINT
9375 PRINT "CURSOR KEYS (Press C
)": PRINT : PRINT "KEMPSTON J/ST
ICK (Press J)": BEEP .5,10
9380 IF INKEY$="c" THEN GO TO 94
00
9385 IF INKEY$="j" THEN GO TO 94
20
9390 GO TO 9380
9400 LET j=2000
9410 GO TO 9000
9420 LET j=2050
9430 GO TO 9000
9499 STOP
9500 FOR n=0 TO 168
9505 READ a
9510 POKE USR "a"+n,a
9515 NEXT n
9650 RETURN
9700 DATA 0,BIN 00001000,BIN 000
11100,BIN 00101010,BIN 00001000,
BIN 00010100,BIN 00010100,BIN 00
10100
9705 DATA 0,0,0,0,0,0,0,BIN 0000
1000
9710 DATA BIN 00011100,BIN 00101
100,BIN 00001000,BIN 00010100,BI
N 00010100,BIN 00010000,0,0
9715 DATA 0,0,0,0,BIN 00001000,B
IN 00011100,BIN 00011010,BIN 000
01000
9720 DATA BIN 00010100,BIN 00010
100,BIN 00000100,0,0,0,0,0
9725 DATA 0,BIN 00000010,BIN 000
00010,BIN 00000110,BIN 00000011,
BIN 00000010,BIN 00000101,BIN 00
000100
9730 DATA 0,BIN 01000000,BIN 010
00000,BIN 01100000,BIN 11000000,
BIN 01000000,BIN 10100000,BIN 00
100000
9735 DATA 0,0,0,BIN 10101010,BIN
 01010101,0,0,0
9740 DATA BIN 00111100,BIN 00111
100,BIN 11111111,BIN 11111111,BI
N 11111111,BIN 11111111,BIN 0011
1100,BIN 00111100
9745 DATA BIN 01111110,BIN 11000
011,BIN 10100101,BIN 10011001,BI
N 10011001,BIN 10100101,BIN 1100
0011,BIN 01111110
9750 DATA BIN 00000000,BIN 00000
000,BIN 00000000,BIN 00011000,BI
N 00011000,BIN 00000000,BIN 0000
0000,BIN 00000000
9755 DATA BIN 00000000,BIN 00000
000,BIN 00111100,BIN 00100100,BI
N 00100100,BIN 00111100,BIN 0000
0000,BIN 00000000
9760 DATA BIN 00000000,BIN 01111
110,BIN 01000010,BIN 01000010,BI
N 01000010,BIN 01000010,BIN 0111
1110,BIN 00000000
9765 DATA BIN 11111111,BIN 10000
001,BIN 10000001,BIN 10000001,BI
N 10000001,BIN 10000001,BIN 1000
0001,BIN 11111111
9770 DATA BIN 11100000,BIN 11010
000,BIN 01000000,BIN 10100000,BI
N 10100000,BIN 00100000,0,0
9775 DATA 0,BIN 00011000,BIN 001
11100,BIN 01111110,BIN 01111110,
BIN 00111100,BIN 00011000,0
9780 DATA 0,BIN 01100000,BIN 011
01000,BIN 01111110,BIN 01101000,
BIN 01100000,0,0
9785 DATA 0,BIN 00000110,BIN 000
10110,BIN 01111110,BIN 00010110,
BIN 00000110,0,0
9790 DATA 0,BIN 00010000,BIN 000
10000,BIN 00111000,BIN 00010000,
BIN 01111100,BIN 01111100,0
9795 DATA BIN 10100101,BIN 11111
111,BIN 10011001,BIN 01011010,BI
N 01111110,BIN 00100100,BIN 0001
1000,0
9800 DATA BIN 01111110,BIN 11111
111,BIN 11111111,BIN 11111111,BI
N 11111111,BIN 11111111,BIN 1111
1111,BIN 01111110
9820 PAPER 0: BORDER 0: CLS
9822 LET j=0
9825 FOR y=1 TO 4: INK y
9830 LET j=j+1: IF j=30 THEN GO
TO 9200
9835 BEEP .5,-25
9855 PRINT AT 0,0
9860 PRINT "
9865 PRINT "
9870 PRINT "
9880 PRINT "
9890 PRINT
9895 PRINT
9900 PRINT "
9905 PRINT "
9910 PRINT "
9915 PRINT "
9920 PRINT
9925 PRINT
9930 PRINT "
9935 PRINT "
9940 PRINT
9945 PRINT "
9950 PRINT "
9955 PRINT
9960 PRINT
9965 PRINT " A SYNACROOP SOFTWAR
E PRODUCTION"
9970 PRINT
9975 NEXT y: GO TO 9825
9980 GO TO 9200
9990 DATA 3,4,3,4,3,4,5,6,7,8,9,
8,7,6,5,6,7,6,5,6,7,8,9,10,11,12
,13,14,15,16,17,16,17,16,15,14,1
4,13,12,13,14,13,12,13,14,15,16,
17,18,17,16,17,18,19,20,21,22,23
,24,24,23,22,23,24,25,26,27,28,2
7,26,25,26,27,28,2
```

```
0 PRINT"▯"
1 PRINT "■WELCOME TO PLANET QWARRK BY IAN HUGHES"
2 PRINT "■──────────────────────────────────────"
3 GOSUB9030
5 POKE54296,0:POKE53281,2:POKE54276,0
6 RESTORE:CLR
10 PRINT"▯"
20 PRINT "■WELCOME TO PLANET QWARRK BY IAN HUGHES"
21 PRINT "■──────────────────────────────────────"
30 V=53248
31 POKEV+16,0
35 POKEV+21,1
40 POKE2040,13
45 FORN=0TO62:READQ:POKE832+N,Q:NEXTN
50 DATA0,255,0,1,219,128,3,219,192,7,231,224,15,25,240
55 DATA123,0,222,79,0,242,75,0,210,71,255,226,226,126,71,161,90,133
60 DATA160,231,5,1,231,128,1,60,128,2,24,64,4,60,32,8,126,16
65 DATA112,255,14,241,255,143,240,0,15,96,0,6
70 POKEV+23,1:POKEV+29,1
80 POKEV,130:POKEV+1,75
81 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
90 PRINT"◣  'F1'=MAIN ENGINES 'F3'=1/2 ENGINES"
100 PRINT"          'Z'=LEFT 'X'=RIGHT"
101 PRINT"▣        DO NOT HIT ANY GREEN WALLS"
102 PRINT"          LANDING PADS '▒▒▒'"
103 PRINT
104 PRINT"◣ ▣REMEMBER■---THE HARDER THE LOCATION AND"
105 PRINT" SOFTER THE LANDING,THE MORE THE POINTS"
110 PRINT"▣        PRESS ANY KEY TO START"
120 GETA$:IFA$=""THEN120
135 POKEV+21,0
136 POKEV+23,1:POKEV+29,1
140 PRINT"▯"
150 FORY=1TO2:PRINT:NEXTY
155 PRINT"▣"SPC(16)" _"
159 PRINT"▣"SPC(16)"/ \"
160 PRINT"▣/‾‾\"SPC(11)"/   \"SPC(4)" ┌‾\"SPC(5)"┌\     ┌"
170 PRINT"▣    \"SPC(9)"/     |"SPC(4)"| |"SPC(5)"| /    |
180 PRINT"▣     \"SPC(8)"|     /"SPC(4)"| |"SPC(5)"||     |"
190 PRINT"▣      \"SPC(7)"|     \_▣▒▒▒▣| |"SPC(5)"||     |"
200 PRINT"▣       \"SPC(5)"/"SPC(12)"|"SPC(5)"|\     |"
210 PRINT"▣        |"SPC(4)"/"SPC(13)"|"SPC(5)"| |    |"
220 PRINT"▣        |"SPC(4)"|"SPC(13)"|"SPC(5)"| |    |"
230 PRINT"▣        |"SPC(4)"|"SPC(8)" ┌──┘"SPC(5)"| |    |"
240 PRINT"▣        /"SPC(4)"|"SPC(8)" |"SPC(10)"| |    |"
250 PRINT"▣       /"SPC(5)"|"SPC(8)"/"SPC(10)"| |    |"
260 PRINT"▣      /"SPC(6)"|"SPC(7)"/"SPC(10)"/ |    |"
270 PRINT"▣     /"SPC(5)" ┌‾"SPC(7)"|"SPC(9)"/  |    |"
280 PRINT"▣    /"SPC(6)" └‾\"SPC(7)"|"SPC(4)" ┌──┘    |    |"
290 PRINT"▣   |"SPC(6)"  |"SPC(7)"|"SPC(4)"|        |    |"
300 PRINT"▣  / "SPC(6)"  |"SPC(7)" └▣▒▒▒▣┘        |    |"
310 PRINT"▣  |"SPC(7)"  /"SPC(20)" |    |"
320 PRINT"▣  └──────▣▒▒▒▣┘                    └▣▒▒▒▣┘"
321 PRINT:PRINT
330 F=700:GR=0
340 X1=24:Y1=58:POKEV,X1:POKEV+1,Y1
350 POKEV+23,0:POKEV+29,0
360 POKEV+21,1
361 GOSUB 370:GOTO361
370 IFY1<>58ANDPEEK(V+31)=1THEN431
371 IFF<0THEN431
372 IFY1<2THEN 431
```

Illustration: Terry Rogers

QWARRK

You are on a secret mission to a remote planet for the Intergalactic Federation, picking up strange cargoes from robot-controlled bases. Santa has been dropping off unwanted Christmas presents in this sector of the universe — and the Federation boss has told you he wants them back! Santa has chosen some really awkward spots to drop off the gifts — so you'll have to brave the dangers of the planet in order to complete your task. There are few landing sites, gravity is extremely strong — and you are running low on fuel. Something Santa never had to bother about! You'll score more points for a landing in a really difficult spot — so experienced pilots will score well. Full instructions are involved in the program. Happy landings!

```
380 POKE54276,0
390 IFPEEK(197)=4THENGR=GR-.5:F=F-12:GOSUB9000
400 IFPEEK(197)=5THENGR=GR-.25:F=F-7:GOSUB9000
410 IFPEEK(197)=12THENX1=X1-3:F=F-1
420 IFPEEK(197)=23THENX1=X1+3:F=F-1
421 LETGR=GR+.1
425 LETY1=Y1+GR
426 IFX1>255THENGOSUB5000
427 IFX1<0THENGOSUB5030
428 IFY1<=4THEN431
430 POKEV,X1:POKEV+1,Y1:GOTO 440
431 IFX1=87ANDY1>=202THENP=25:GOTO7000
432 IFX1=192ANDY1>=98THENP=10:GOTO7000
    433 IFX1=192ANDY1>=206THENP=40:GOTO7000
    434 IFX1>=44ANDY1>=200ANDPEEK(V+16)=1THEN
        P=15:GOTO7000
    435 GOTO 8000
    440 PRINT"■FUEL:      ■■■■■":F
    450 RETURN
4445 IFPEEK(V+27)=1THEN8000
5000 LETX1=X1-255
5010 POKEV+16,1
5011 RETURN
5030 IFX<0THENX=X+255:POKEV+16,0:RETURN
7000 PRINT"■":POKEV+21,0
```

BY IAN HUGHES

RUNS ON A COMMODORE 64

```
7001 IFGR>1THENPOKE54296,0
7010 IFGR>1THENPRINT"■YOU LANDED BUT YOU HIT RATHER TO HARD"
7020 IFGR>1THENPRINT"SO SORRY BUT YOUR WOUNDS ARE VERY BAD"
7030 IFGR>1THENPRINT"MIND YOU I LIKE THE 5 MILE CRATER IDEA"
7041 IFGR>1THENGOTO8102
7042 PRINT"■WELL DONE YOU LANDED SAFELY"
7043 IFGR<=0THENRG=10
7044 IFGR<=.2ANDGR>0THENRG=9
7045 IFGR>=.3THENRG=7
7046 IFGR>=.7THENRG=3
7047 IFGR>=.8THENRG=1
7049 P%=RG*P+(RND(0)*5)+1:P=P%
7050 POKE54296,15
7051 POKE54277,9:POKE54276,33
7059 FORT=1TO30:NEXT
7065 READHF
7066 READLF
7077 IFLF=-1THENPOKE54273,0:POKE54272,0:GOTO7081
7078 POKE54273,HF:POKE54272,LF
7080 POKE 54276,0:GOTO7051
7081 FORC=1TO10
7083 PRINT"                                        "
7085 PRINT"■■A GOOD LANDING ■POINTS:";P;""
7087 FORV=1TO100:NEXTV:NEXTC:GOTO8102
7100 DATA22,227,25,177,28,214,22,227,19,63,22,227,28,214,22,227,19,63
7111 DATA22,227,28,214,38,126,38,126,36,85,34,75
7112 DATA22,227,25,177,28,214,22,227,19,63,22,227,28,214,22,227,19,63
7113 DATA22,227,28,214,38,126,38,126,36,85,34,75,-1,-1
8000 POKE54296,15
8050 FORYY=1TO2
8051 FORY=1TO20
8065 POKE53281,0:POKE53281,1:POKE53281,0
8069 NEXTY
8070 POKE54296,15:POKE54277,17:POKE54272,1:POKE54276,129
8072 POKE54273,(3*RND(0))+5
8082 POKEV+28,1:FORX=1TO300:POKE54278,32:NEXT:POKEV+28,0
8083 NEXTYY
8085 POKEV+21,0
8086 POKE54276,0:POKE54277,0
8087 POKE53281,2
8102 PRINT
8103 PRINT"ANOTHER GAME Y OR N"
8104 POKE198,0
8110 INPUTA$
8120 FOR C=1TO LEN(A$):IFMID$(A$,C)="Y"THENRUN
8121 NEXTC
8130 PRINT"BYE THEN":END
9000 IFPEEK(197)=4THEND=15
9001 IFPEEK(197)=5THEND=10
9006 POKE54296,D:POKE54277,9:POKE54278,128
9007 POKE54276,129:POKE54273,6:POKE54272,18
9015 RETURN
9030 PRINT"■ YOU ARE ON A MISSION FOR THE FEDERATIONWHEN ALL OF A SUDDEN YOU";
9040 PRINT" DETECT A FAULT ON BOARD YOUR SHIP.THERE IS ONLY ONE    COURSE OF";
9050 PRINT" ACTION, YOU MUST ATTEMPT A    FORCED LANDING ON THE PLANET QWARRK."
9060 PRINT"FOR YOU THERE ARE SEVERAL DIFFICULTIES:"
9070 PRINT"■■1.■THERE ARE ONLY A FEW LANDING SITES"
9080 PRINT"■■2.■THE GRAVITY IS STRONG,PULLING YOU TO    DOOM"
9090 PRINT"■■3.■YOUR ENGINES ARE SPLUTTERING AND USING  FUEL QUICKLY"
9100 PRINT"■■4.■YOU MUST LAND GENTLY USING 1/2 ENGINES"
9110 PRINT"■5.■THE WALLS ARE MADE OF ANTI-MATTER,THEY  ARE DEADLY TO TOUCH"
9111 INPUT"■■PRESS RETURN KEY";A$:RETURN
```

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Could you accept the responsibilities of a Barony? Farm your lands, maintain workers, hire merceneries, wage feudal wars?
Yearly analysis of success or failure of your decisions.
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Graphics show your position – status reports – different layout with each new game – 4 players can search different levels – 400 rooms – 600 corridors – 1000 locations to explore.
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The Martians have invaded, destroying the molecular structure of earth's atmosphere to make it compatible with their own planet.
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ARCADE

VIC 20 unexp
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As a pilot testing the latest star ship, breakdown in your guidance systems causes you to materialise in the breeding grounds of the Psigophorus, an unbelievably nasty insect life form which kills anything entering its space. Survival depends on destruction of the eggs before they hatch to form a SWARM. They can use your laser energy to mutate at an alarming rate and the only escape from the devastating attack of a Swarm is by destroying the Psigophorus in only one brief stage of its life cycle.
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ARCADE

VIC 20 unexp
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It is the 23rd Century – unemployment 99.9% – due to 300% inflation, money replaced by credit discs – to relieve boredom the I.R.S.P. sets up huge gambling arcades – debts run high – inhabitants who cannot pay take part in "THE GAME" Transported to Launch Base 3 they are sealed into a Zelton Earth Defender and attacked by waves of mutant birds, specially bred on the Space Station Alien. Moneylenders bet on the length of the ill-fated player's survival, so recovering their losses.
SET your body modulator to HYPERDRIVE. PRIME your firing fingers and HANG LOOSE.
High scoring game.

ARCADE

VIC 20 unexp
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by Andrew Haisley

The year 2500 A.D. has produced a problem: space Rats are using humanoids for experimentation! Their technical skills include impenetrable defence systems. A Royal Space Fleet Pilot sent to destroy them has been killed. YOU ARE INVITED TO TAKE HIS PLACE.
You will be bombarded by zig-zagging steel arrows – if not destroyed they turn into Thunderflashes which explode when hit. Being unstable they release sparks which you must destroy before they hit you. Your survival angers the Rats who increase the speed and fury of the attack.
High scoring game.

VIC 20 16K
DRAGON 32K
MICROPOLY
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Play this version of the family board game with a competent and challenging microbanker and property tycoon. State of game and board on instant recall – or the game saved.
Game for up to four players AND the computer.

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A series of ridiculously impossible layouts which our self-destructing Programmer has devised for VICtims! Just get from "A" to "B" without being blown up or eaten by a COBUS – simple? You are given five lives and five ZOGS to hyperSpace a COBUS when you are cornered. Successful exit brings the reward of greater challenge with progressively difficult layouts and hidden complications. Keys require collecting in a correct order to open the door; devilish invisible mines and

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The Bugs in this game will raise your blood pressure to the limits and drive spectators into a frenzy!
In this high scoring game killer bugs roam the top 4 floors. Stay alive by clinging to the ceiling whilst they pass beneath, but you cannot seek refuge on that square again. BUNGE a Bug and gain 50 points, but he may return for his revenge – a vicious ritual followed by your paralysis and death!
WATCH the Bugs go hopping mad when target scores give you the services of a plasterer.
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Your mission starts in a large briefing room: there is a door to the East. You can see a blood stained envelope and a cold strong box, you are carrying nothing at all! TIME is running out, the robots have been activated – WHAT ARE YOU GOING TO DO?
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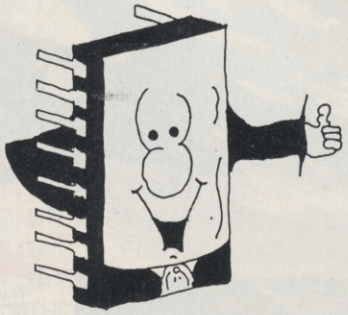

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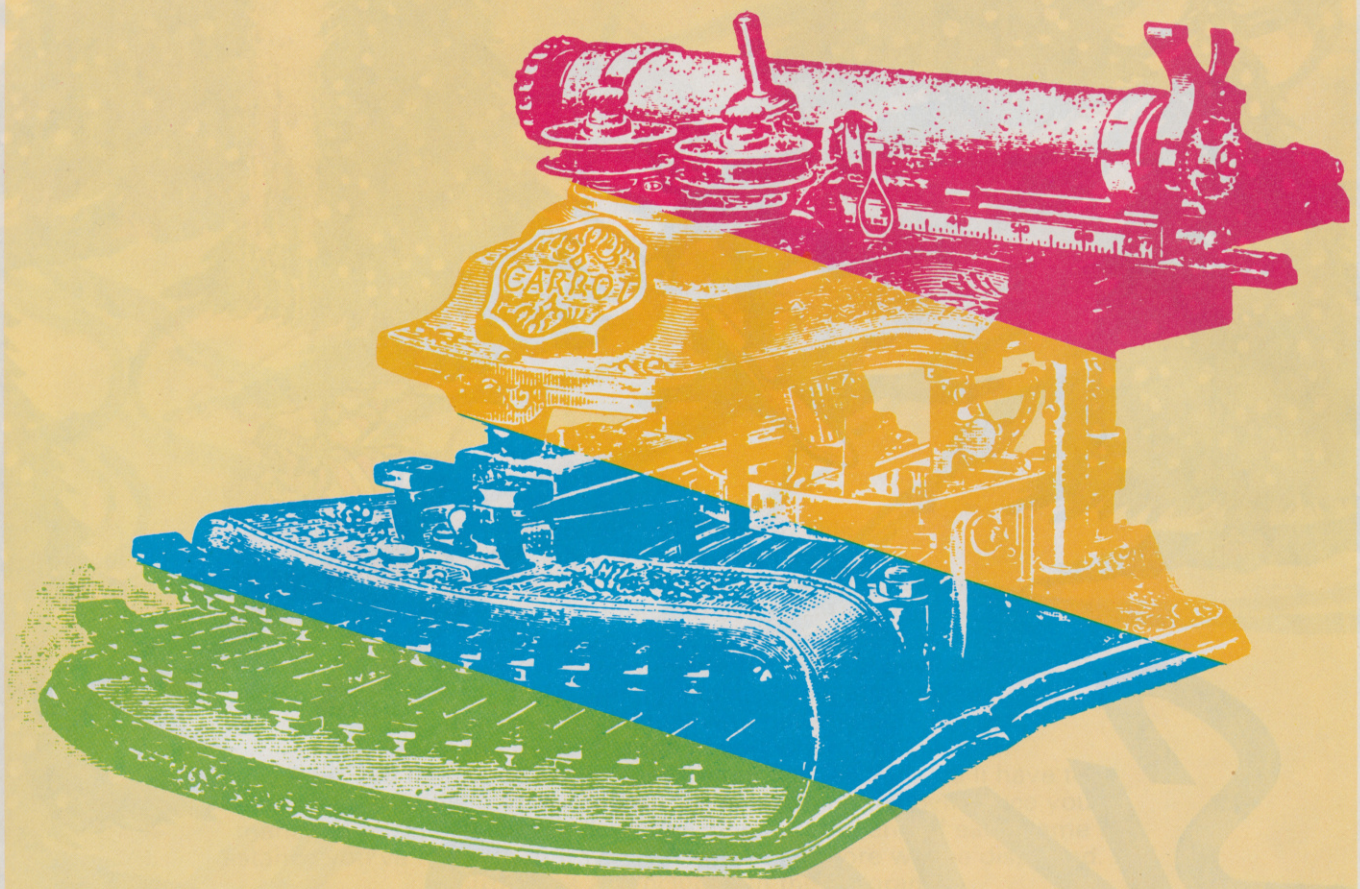

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SKIER

BY MARK VASEY

RUNS ON A

VIC-20 IN 3.5k

```
1 PRINT"■"
2 PRINT"*****SKIER******"
3 PRINT"* BY MARK VASEY*"
4 PRINT"****************"
5 PRINT"Z=LEFT":PRINT"C=RIGHT"
7 PRINT"■PLEASE WAIT"
10 POKE51,255:POKE52,27:POKE55,255:POKE
   56,27
20 FORI=0TO511
30 POKE7168+I,PEEK(32768+I):NEXT
35 FORI=0TO46:READA
40 POKE7168+I+(N*8),A:NEXT
50 POKE36869,255
60 DATA24,60,90,153,60,90,153,24
70 DATA0,0,2,1,1,29,17,209
80 DATA24,24,30,26,18,16,25,254
90 DATA24,24,120,88,72,8,152,127
100 DATA24,153,219,189,153,24,90,231
110 DATA0,16,56,145,124,16,108,0
120 POKE36879,25:POKE36878,15
```

```
130 Z=7756:T=7:C=38476:W=36877:Q=36876:
    D=36878:H=0
131 PRINT"■■■■INSTRUCTIONS":PRINT"■SKI
    DOWN SLOPE          AVOIDING:-"
132 PRINT"■■E ■SPECTATORS"
133 PRINT"■■■A ■DEAD SKIERS"
134 PRINT"■■■■ ■TREES":PRINT"■■■IT ALSO
    TURNS DARK AT 200 AND 300METRES"
135 GETA$:IFA$<>""THEN137
136 GOTO135
137 PRINT"■":FORR=135TO241:POKEQ,R:NEXT:
    POKEQ,0
138 FORU=0TO0
139 SC=SC+1:IFSC=22THENPRINT"■■■■■■■■■■■■
    ■■■■■■■■■■■■
```

Whooooosh! Hi there. This ski-ing lark is good fun isn't it! Now, thanks to Mark Vasey, you won't even have to get out of your armchair to enjoy the thrills and spills of this most popular winter sport. All you have to do is ski down the mountainside avoiding fallen skiers, trees and spectators who have gathered at the edge of the track to laugh at you when you fall over. After 200 metres down the slope night will fall and you'll have to use all your skills to stay upright! The same thing happens once you've managed to ski 670 metres down the slope. At the end of each game the distance you've manage to travel and your high score will be displayed. Full instructions are included in the program.

PROGRAM NOTES:
10-20: characters. 130-135: instructions. 137-160: ground movement. 200-230: man movement. 310-335: checks for collisions. 340-396: end routine.

```
170 PRINTTAB(T)"■■■
```

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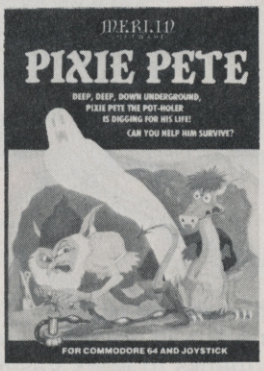

PIXIE PETE - Deep, deep down underground, PIXIE PETE the pot-holer is digging for his survival. You control this dauntless pixie, and must help him dig his own maze to escape from DESMOND THE DRAGON for as long as possible, but if he comes in range: quickly engage your HYDROLIC RAM PUMP to blow him up. If you manage to destroy DESMOND he will return to haunt you as GORGO THE GHOST who causes many problems for PETE. **£6.95**

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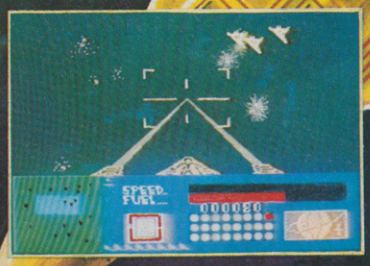

3D SEIDDAB ATTACK

The Seiddab have broken through the Earth's defenses and are attacking the cities. You are patrolling the city streets in the latest Knat Tank with its surface to air missiles.

Trundling along you observe the tell tale blips of the Seiddab as they appear on your scanner. They break formation and scatter across the city. Suddenly you catch sight of an alien craft swooping over the buildings to your right. He fires a plasma torpedo at your tank. You attempt to dodge but the missile finds its mark, shaking your tank and leaving a hole in the armour.

You unleash a missile and guide it accurately to the target. The Seiddab explodes and crashes from sight. You hunch over the controls once more, because this is only the beginning . . .

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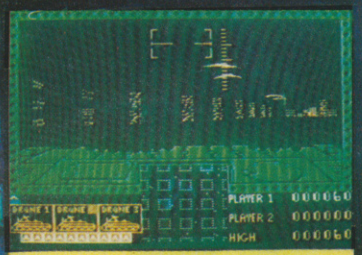

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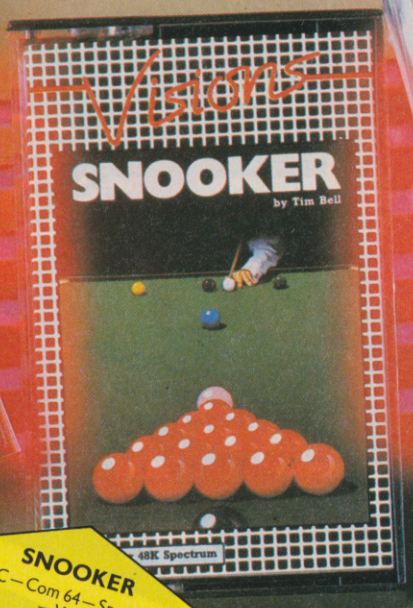

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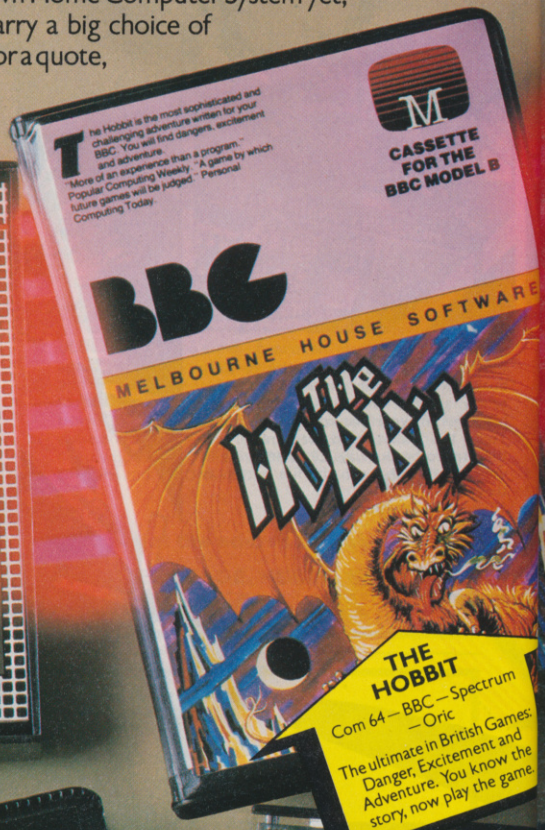

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ALIEN ATTACK

Earth is under attack! Not again, I hear you groan. Well it is, and it's up to you to stop moaning and get out there and fight those irritating aliens who keep causing so much trouble around the galaxy. Your city is defended by three laser bases — these are activated by pressing the "1", "2" and "3" keys. To kill the invaders, you must position your sight on target and fire away in a similar fashion to that arcade favourite, Missile Command. Your city is also protected by a force-field — which is gradually worn down by alien fire. If they manage to get through the force field and reach the city then you'll be destroyed!

A new force field is generated after every third wave of alien attackers has been destroyed. Also after every third wave, the speed and numbers of aliens increase — but you do get bonus points for every three waves you manage to wipe out. Full instructions are included in the program.

RUNS ON A DRAGON 32

BY IAN MATHER

```
1 REM****ALIEN****ATTACK****
2 REM**BY**IAN**MATHER***
5 GOSUB7000
10 DIMA(2,2),B(2,2):PLAY"T255V31":HS=199:REM**BY**ME**
20 PMODE3,1:SCREEN1,0:COLOR4,3:PCLS
30 LINE(0,179)-(255,192),PSET,BF
40 FORN=30TO226STEP98
50 DRAW"BM"+STR$(N)+",169M+8,+9L16M+8,-9":PAINT(N,172),4,4:NEXT
60 DRAW"C2BM0,169R255"
70 FORN=0TO255STEP6:PRESET(N,169):NEXT
80 DRAW"BM10,188R4U2L4U2R4BR4NR4D4R4BR4U4R4D4NL4BR4U4R4D1M-2,+1M+2,+1D1BR4NR4U2N
R2U2R4;;C1BM100,188U4D2R4U2D4BR4R4L2U4L2R4C2;;BM180,188R4U2L4U2R4BD4BR4U4D2R4U2D
4BR4R4L2U4L2R4BD4BR4NR4U2NR2U2R4BD4BR4NU4R4BR4U4R2M+2,+1D2M-2,+1
90 A$(0)="R4U4L4D4R4":A$(1)="BR4U4D4BR2":A$(2)="NR4U2R4U2L4BM+4,+4":A$(3)="R4U2N
L2U2L4BM+4,+4":A$(4)="BR4U2NU2L4U2BM+4,+4":A$(5)="R4U2L4U2R4BD4":A$(6)="R4U2L4D1
U3R4BD4":A$(7)="BR4U4L4BM+4,+4":A$(8)="R4U4L4D3U1R4D2":A$(9)="R4U4L4D2R4D2"
95 GOSUB6010
100 DRAW"C1BM0,7M+2,-1U6R2D6NM+2,+1U1R2U4L6D4":PSET(2,2,3):PSET(4,2,3):SC=0:B=1
110 GET(0,0)-(7,7),A
120 DRAW"C2BM0,8BR2D7R2U7D3R2L6D1R6
130 GET(0,8)-(7,16),B
140 LINE(0,0)-(20,20),PRESET,BF
145 POKE65494,0:X=16:Y=10:ME=4:RR=9:W=0
150 IFB>5THENB=5
153 C(1)=B*2:C(2)=B*2:C(3)=B*2:IFME>9THENME=9
154 COLOR4,3:LINE(232,188)-(240,180),PSET,BF:COLOR2,3
156 DRAW"BM232,188"+A$(ME)
160 FORT=1TO3:COLOR4,3:LINE((T-1)*98+26,178)-((T-1)*98+32,174),PSET,BF:COLOR2,3:
DRAW"BM"+STR$((T-1)*98+26)+",178"+A$(B*2):NEXTT
170 FORN=1TO100:PSET(RND(256),RND(160),2):NEXT
180 FORT=1TO5:L(T)=RND(12)+10:M(T)=RND(3):O(T)=L(T):F(T)=0:NEXT
190 PUT(X*8,Y*8)-(X*8+7,Y*8+7),B
200 FORT=1TORR:IFPEEK(341)=223ANDY>0THENY=Y-1:GOSUB1000:LINE(X*8,(Y+1)*8)-(X*8+7
,(Y+1)*8+8),PRESET,BF
```

Illustration: Dorian Cross

```
220 IFPEEK(342)=223ANDY<20THENY=Y+1:GOSUB1000:LINE(X*8,(Y-1)*8)-(X*8+7,(Y-1)*8+7
),PRESET,BF
240 IFPEEK(343)=223ANDX>0THENX=X-1:GOSUB1000:LINE((X+1)*8,Y*8)-((X+1)*8+7,Y*8+7)
,PRESET,BF
260 IFPEEK(344)=223ANDX<31THENX=X+1:GOSUB1000.LINE((X-1)*8,Y*8)-((X-1)*8+7,Y*8+7
),PRESET,BF
280 A=VAL(INKEY$):IFA<1ORA>3THEN450
300 IFC(A)<1THEN460
320 U=(A-1)*98+30
340 LINE(U,167)-(X*8+3,Y*8+4),PSET
360 C(A)=C(A)-1
380 COLOR4,3:LINE(U-4,178)-(U+4,172),PSET,BF:COLOR2,3
400 DRAW"BM"+STR$(U-4)+",178"+A$(C(A))
420 SOUND235,3
425 FORJ=1TOB
427 IFF(J)=1THEN435
430 IFX=Q(J)ANDY=R(J)THEN2000
435 NEXT
440 LINE(U,167)-(X*8+3,Y*8+4),PRESET
450 NEXT
460 FORT=1TOB:IFF(T)=1THEN490ELSEPUT(L(T)*8,M(T)*8)-(L(T)*8+7,M(T)*8+7),A
464 LINE(Q(T)*8,R(T)*8)-(Q(T)*8+7,R(T,*8+7),PRESET,BF
465 Q(T)=L(T):R(T)=M(T)
470 M(T)=M(T)+1:L(T)=L(T)+INT(RND(0)*2-RND(0))
480 IFM(T)=21THEN3000
490 NEXTT
500 IFF(1)+F(2)+F(3)+F(4)+F(5)=B THEN5000
900 GOTO200
1000 PUT(X*8,Y*8)-(X*8+7,Y*8+8),B:RETURN
2000 F(J)=1:COLOR4,3:LINE(Q(J)*8,R(J)*8)-(Q(J)*8+7,R(J)*8+7),PSET,BF:PLAY"O1ABCD
EFABCDE":SC=SC+RND(10):GOSUB4000:COLOR2,3:PUT(X*8,Y*8)-(X*8+7,Y*8+7),B:GOTO440
3000 SCREEN1,1:PLAY"O2ABCDEFO3ABCDEFO4ABCDEF"
3005 COLOR4,3:LINE(232,188)-(240,180),PSET,BF:COLOR2,3:DRAW"BM232,188"+A$(ME-1)
3010 F(T)=1:ME=ME-1:IFME<1THEN6000
3015 LINE(Q(T)*8,R(T)*8)-(Q(T)*8+7,R(T)*8+7),PRESET,BF:SCREEN1,0:GOTO490
4000 A$=STR$(SC):COLOR4,3:LINE(60,188)-(94,180),PSET,BF:COLOR2,3:DRAW"BM60,188":
FORE=2TOLEN(A$):DRAW A$(VAL(MID$(A$,E,1)))+"BR4":NEXT:RETURN
5000 W=W+1:POKE65495,0
5010 POKE65493,0:IFRR>4ANDW>1THENRR=RR-.5
5020 IFW/3=INT(W/3)THENFORN=1TO10:SC=SC+RND(W):SOUND100,1:GOSUB4000:NEXT:B=B+1:P
OKE65494,0:FORN=1TO31STEP3:FORNN=1TO10STEP2:PLAY"O2V"+STR$(N)+";"+STR$(NN):NEXTN
N,N:POKE65495,0:ME=ME+1:GOTO150ELSE180
6000 SCREEN1,0:FORN=1TO4000:NEXT
6004 IFSC>HS THENHS=SC
6005 IFINKEY$=""THEN6005ELSE20
6010 A$=STR$(HS):COLOR4,3:LINE(118,182)-(158,188),PSET,BF:COLOR1,3:DRAW"BM120,18
8":FORE=2TOLEN(A$):DRAWA$(VAL(MID$(A$,E,1)))+"BR4":NEXT:COLOR2,3:RETURN
7000 CLS:PRINT:PRINT"          alien attack"
7010 PRINT:PRINT"  EARTH IS UNDER ATTACK AND IT    IS UP TO YOU TO STOP THE
   ALIENS.                          YOUR CITY CAN BE DEFENDED BY    3 LAZER BASES
.WHICH ARE FIRED   BY PRESSING THE '1','2'OR'3'    KEY."
7020 PRINT"  TO KILL THE INVADERS YOU MUST   POSITION THE SIGHT ON TARGET    AND
 FIRE ONE OF THE LAZERS."
7030 PRINT:PRINT"   PRESS ANY KEY TO CONTINUE"
7035 SCREEN0,1
7040 IFINKEY$=""THEN7040
7050 CLS:PRINT:PRINT"  IF THE ALIENS REACH THE GROUND  THEY WILL BE STOPPED BY A
       FORCEFIELD(IF THERE IS ONE).    EVERY 3 WAVES OF ALIEN A NEW    SHIELD IS
 GENERATED"
7060 PRINT"  IF THERE IS NO FORCEFIELD        THEN YOU AND YOUR CITY WILL      BE
DESTROYED.                       TO MAKE THINGS WORSE FOR YOU    THE NUMBER AND SPEE
D OF THE     ALIENS WILL INCREASE.           EVERY 3 WAVES BONUS POINTS      WIL
L BE AWARDED"
7070 PRINT"   press any key to start"
7075 SCREEN0,1
7080 IFINKEY$=""THEN7080
7090 RETURN
```

We're not quite sure whether the World's ready for these games . . . but we've released them just the same.

VOYAGER SOFTWARE

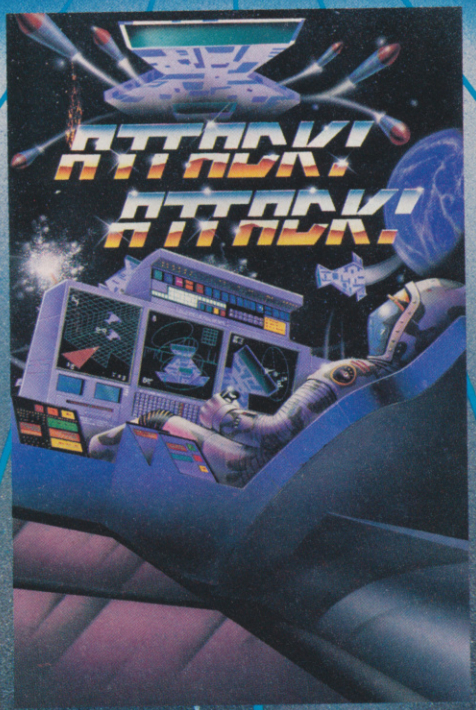
The Marcon Empire have invaded Earth and enslaved the population. An endless stream of stellafreighters now plunder the earth's mineral wealth, draining away every lifeblood of the planet.

A small band of freedom fighters are still operating from an abandoned mining station on the Moon. One of them is you.

As you set out from your secret base your first objective is to manoeuvre through the barrier of lethal space mines to one of the enemy re-charging stations to recharge your neodinium lasers; then you will be able to carry on with your mission of destroying the marauding stellafreighters.

There is rumour of a Marcon munition station near by, heavily defended by missiles. If only you could locate and plunder it; your heroic band of avengers would then have enough fire power to strike a massive blow for freedom . . . or die in the attempt . . .

Avenger is for the Dragon 32.

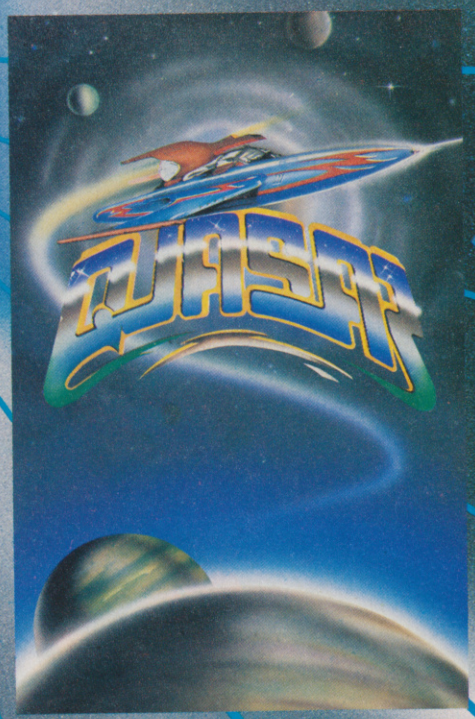


Tension mounts as your Stratofighter enters the patrol area. Enemy Skyfreight Convoys are increasing as their need for Iridon Ore grows in the arms race against you.

Your raydon missile sight picks up an enemy convoy entering your quadrant. You select hyperdrive and are slammed back in your seat. Fingers hover over firing buttons as enemy fighters peel away from the convoy to engage you. As your epic battle begins the enemy Skyfreighters unleash wave after wave of air to air missiles against you. The battle rages on and your will to survive and determination to win increases. The convoy must be destroyed; your people are depending on you.

Night falls and glaring explosions fill the sky; don't let your concentration wander, if the convoy gets through your people are doomed. you must succeed; you must. . . .

Attack Attack is for the Commodore 64.



Your mission: destroy the Etron rocket base on the planet Hagon.

Piloting the most sophisticated space fighter yet conceived you know that if your mission fails the awesome Etron rocket attacks will destroy your galaxy.

Entering the fearsome space tunnel; the first of Hagons many sophisticated defence systems, every fibre of your being is filled with dread.

The Hagon fleet have been alerted and wave after wave of Astrofighters come hurtling toward you. As you battle your way to the end of the tunnel you begin to realise just how suicidal this mission could be.

Zooming through Hagon's defensive asteroid belt your concentration intensifies; you have only a fraction of a second to differentiate between asteroids, space mines and Etron rockets as they flash toward you.

Hugging the planet's surface, dodging defence poles and trying to deal with everything else the Hagon's throw at you, you remind yourself that the fate of an entire galaxy rests on the outcome of your mission; you must succeed . . . Quasar is for the Commodore 64.

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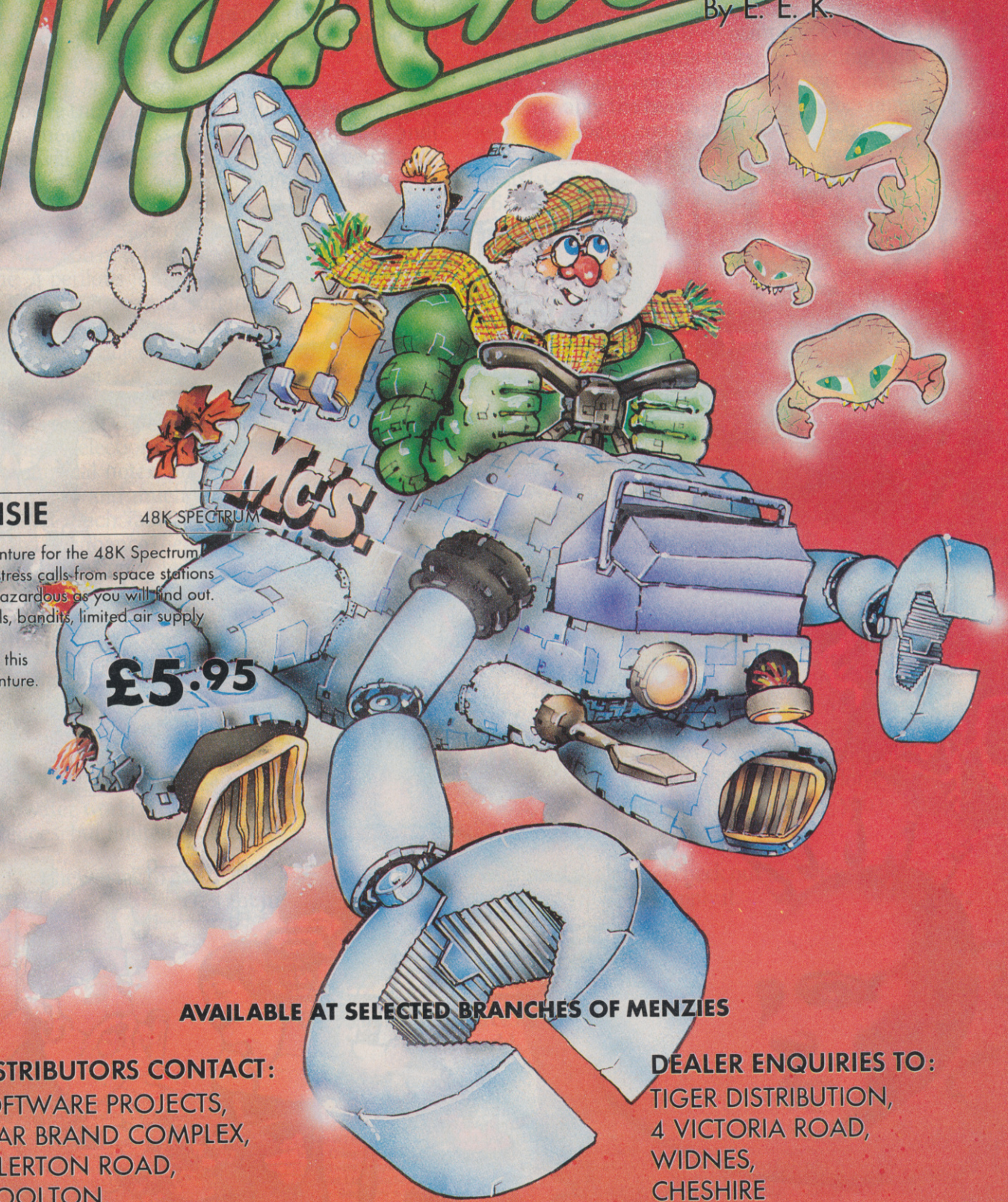

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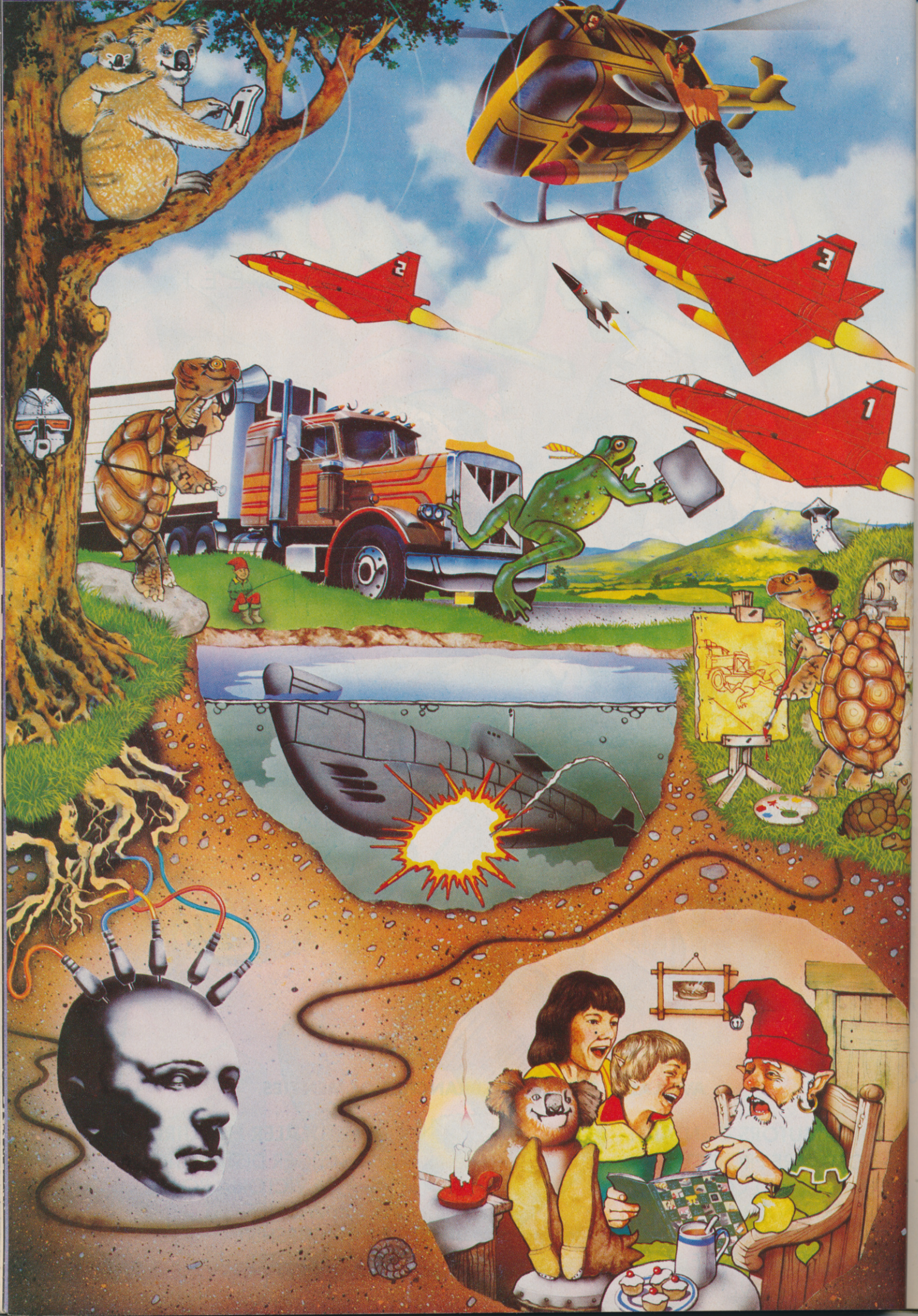
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Your wish is your command.

In another time, another world, not too far away from your own front room, you can be in command of . . .

1. Zaxxon *by Datasoft.*

You're the pilot. Climbing, diving, swooping in on an enemy fortress. A barrage of missiles and gunfire will try and stop you. Just when you think you're through, a powerful robot's lethal homing missile zaps you...or does it?

2. Frogger *by Sierra On-Line.*

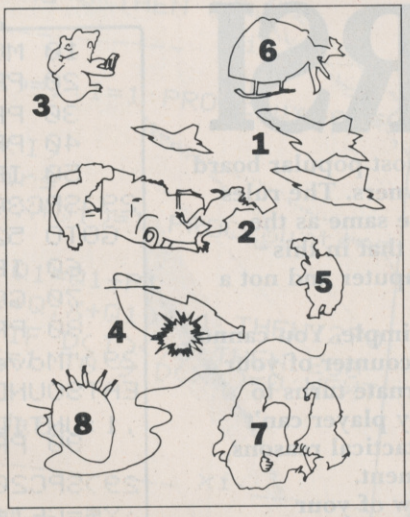
Now you're a frog stranded a long way from home. A perilous journey awaits you. Once across the busy motorway, a surging river full of logs, turtles and alligators awaits. Better flex those Froggy leg-muscles though, the bank is steep, so look before you leap!

3. KoalaPad Touch Tablet *by Koala.*

You can't overfeed this Koala — he'll make his own menu selections. He'll also move game players, make musical notes, draw computer graphics and much more. The KoalaPad Touch Tablet is an accessory that'll enhance the capabilities of your home computer system.

4. Sea Dragon *by Adventure International.*

Take a deep breath — you'll need it to navigate your sub through a labyrinthian underwater passage to free the menace of the imprisoned Sea Dragon. Mines, electrifying eels and lethal laser beams await you in this murky underwater world. You've limitless torpedoes, but limited air, so hurry!



5. Turtle Graphics II *by HesWare.*

This Turtle's about to paint the town red. Or green. Or blue with pink spots. By teaching him to paint, draw and colour he'll teach you, painlessly and enjoyably, the basics of computer programming — maths, logic, communications and more with over sixty commands. Ideal for children from six to sixty.

6. Choplifter *by Broderbund.*

Sixteen hostages are holed up in an inaccessible barracks. Only an ace chopper pilot can free them — you!

Watch out for the tanks, they'll crush anything. They're just for starters — fighter jets and the awesome homing air-mines are yet to come. Good luck . . . you'll need it!

7. Kids and the Apple/Atari *by Datamost.*

These books will teach you, simply, how to write your own programmes. Step-by-step instructions teach you how to create your own action, board and word games. Programme your finances or even learn another language — whatever you do, you'll get the most out of your home computer.

8. Suspended *by Infocom.*

20 miles beneath the earth's surface your brain is wired to a computer network. You'll strategically manipulate 6 robots to overcome a myriad of realistic and original problems as you try to maintain surface-side equilibrium. But don't worry, the end is in sight — you're only there for 500 years!

Phew, back to earth! Now beam yourself over to your local dealer and check out his software.
He's got just about everything, we should know, we supply it.

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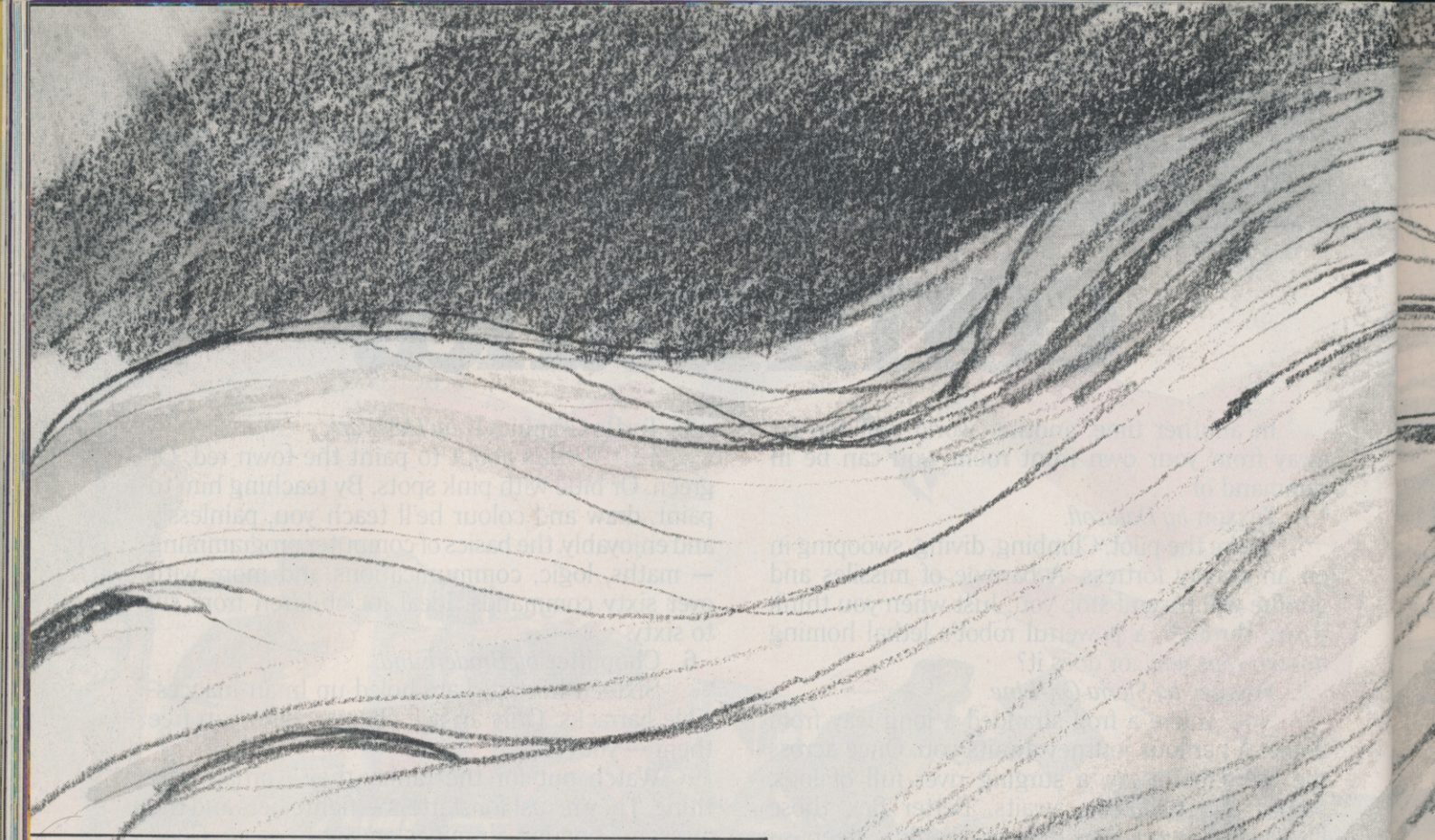


BY DAVID WATERFIELD

RUNS ON A BBC IN 32K

REVERSI

Reversi, like chess, is one of the most popular board game conversions among micro owners. The rules for the Beeb version are exactly the same as the standard game — the difference is that in this version you are up against the computer and not a human opponent.

The rules of the game are very simple. You cannot place one of your pieces next to a counter of your own colour. Each player takes alternate turns to place a counter on the board. If any player can't move or doesn't wish to move for tactical reasons, the play can be passed to the opponent.

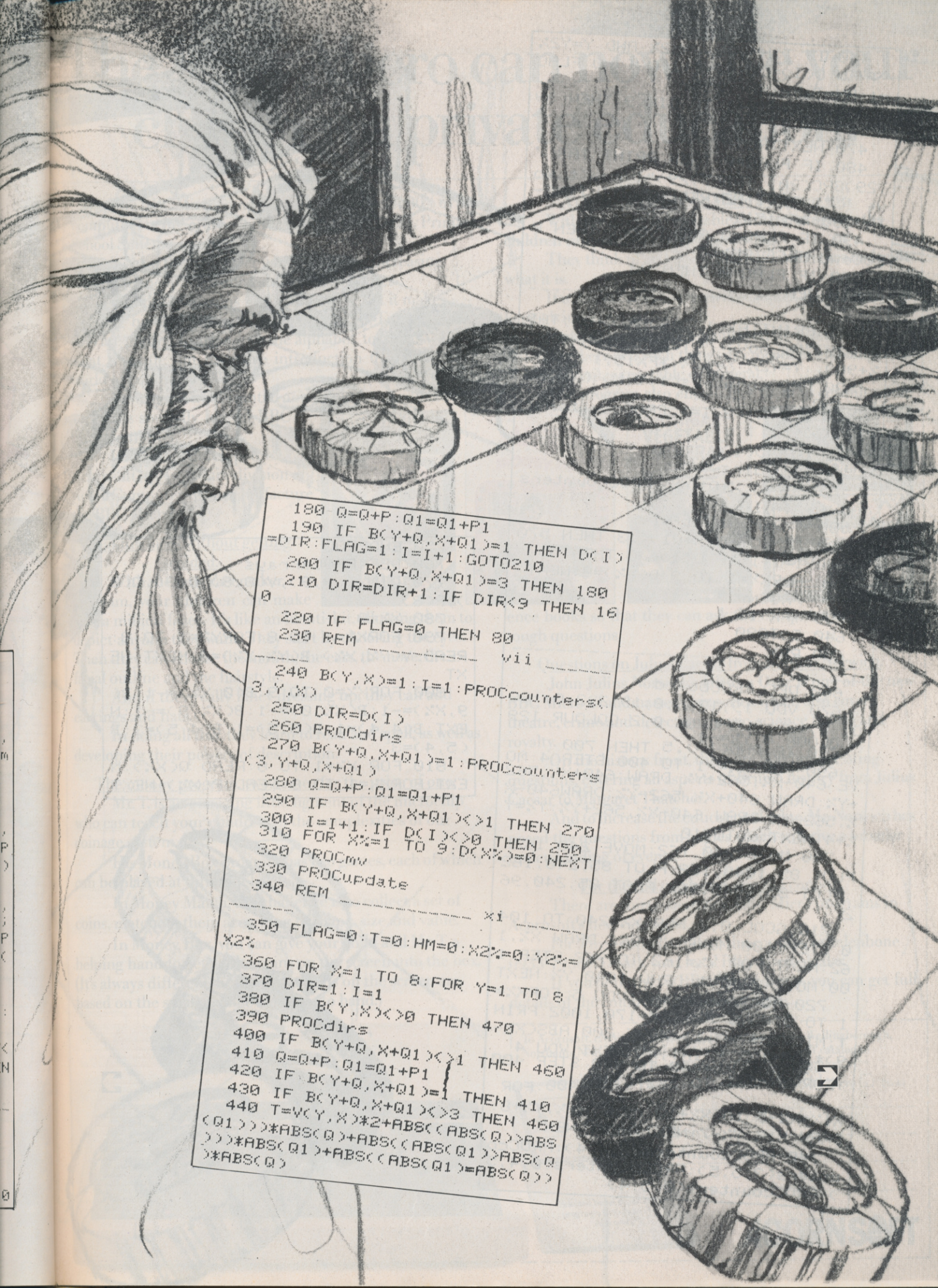
The object of the game is trap a row of your opponent's counters between your pieces. If you succeed, all the pieces that have been captured change to your playing colour. The best winning tactic is to occupy as many of the corner squares as you can. This puts you in a powerful position, allowing you to attack the computer's pieces without endangering your own counters.

At the beginning of a game, you are given the option of moving first or allowing the computer to do so. To enter a move simply press the number of the square you wish to move — followed by the corresponding letter. Illegal moves will be rejected and if you cannot move you should enter "I".

At the end of a game, when the board is full or when neither player can move, the score is added up and the winner announced.

Illustration: John Davis

```
   10 MODE 1:MV=4:PM%=0
   20 PROCarrays
   30 PROCboard
   40 PROCumove
   50 IF A$="n" THEN PRINTTAB(7,
29)SPC30;TAB(7,29)"";:PROCrandom
:GOTO 520
   60 IF A$<>"y" THEN 40
   70 GOTO 90
   80 PRINTTAB(8,29)SPC10;TAB(7,
29)"Move illegal !";:T%=TIME:REP
EATSOUND&11,-15,51-.25*(TIME-T%)
,1:UNTIL TIME-T%>200:*FX15,1
   90 PRINTTAB(0,29)SPC5;TAB(18,
29)SPC20;TAB(7,29)"Your move ?";
:Y$=GET$:PRINT;Y$;",";:X$=GET$:P
RINT;CHR$((ASC(X$)OR32);:Y=VAL(
Y$):X=(ASC(X$)OR32)-96
  100 IF X=0 AND Y=0 THEN 90
  110 IF X=9 AND Y=9 THEN PM%=1:
GOTO350
  120 IF X>8 OR X<1 OR Y>8 OR Y<
1 OR INT(X)<>X OR INT(Y)<>Y THEN
 90
  130 REM _____ vi _____
_____
  140 DIR=1:I=1:FLAG=0
  150 IF B(Y,X)<>0 THEN 80
  160 PROCdirs
  170 IF B(Y+Q,X+Q1)<>3 THEN 210
```



```
  180 Q=Q+P:Q1=Q1+P1
  190 IF B(Y+Q,X+Q1)=1 THEN D(I)
=DIR:FLAG=1:I=I+1:GOTO210
  200 IF B(Y+Q,X+Q1)=3 THEN 180
  210 DIR=DIR+1:IF DIR<9 THEN 16
0
  220 IF FLAG=0 THEN 80
  230 REM
```



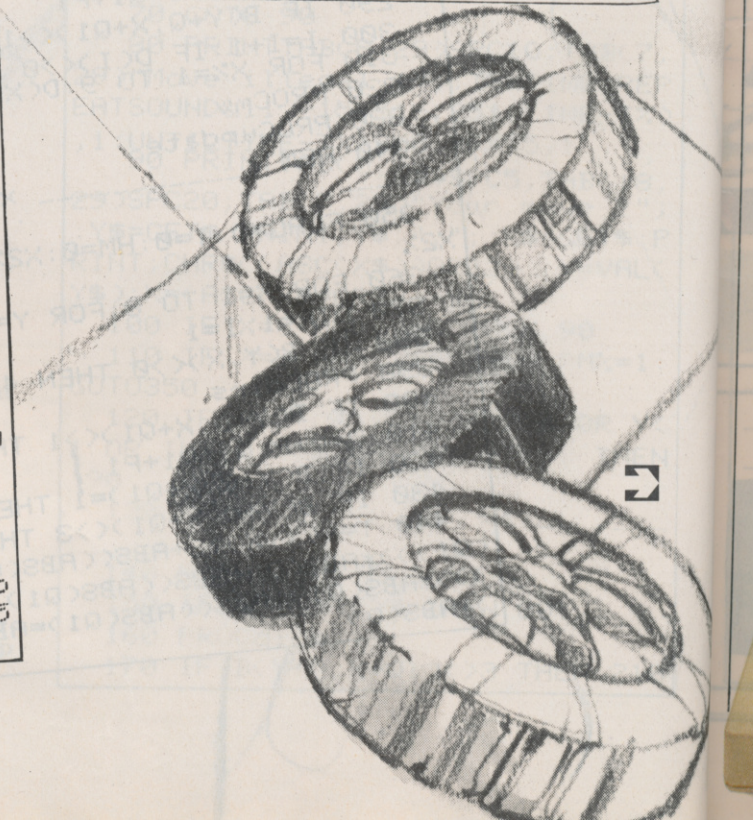
```
  240 B(Y,X)=1:I=1:PROCcounters(
3,Y,X)
  250 DIR=D(I)
  260 PROCdirs
  270 B(Y+Q,X+Q1)=1:PROCcounters
(3,Y+Q,X+Q1)
  280 Q=Q+P:Q1=Q1+P1
  290 IF B(Y+Q,X+Q1)<>1 THEN 270
  300 I=I+1:IF D(I)<>0 THEN 250
  310 FOR X%=1 TO 9:D(X%)=0:NEXT
  320 PROCmv
  330 PROCupdate
  340 REM
```



```
  350 FLAG=0:T=0:HM=0:X2%=0:Y2%=
X2%
  360 FOR X=1 TO 8:FOR Y=1 TO 8
  370 DIR=1:I=1
  380 IF B(Y,X)<>0 THEN 470
  390 PROCdirs
  400 IF B(Y+Q,X+Q1)<>1 THEN 460
  410 Q=Q+P:Q1=Q1+P1
  420 IF B(Y+Q,X+Q1)=1 THEN 410
  430 IF B(Y+Q,X+Q1)<>3 THEN 460
  440 T=V(Y,X)*2+ABS((ABS(Q)>ABS
(Q1)))*ABS(Q)+ABS((ABS(Q1)>ABS(Q
)))*ABS(Q1)+ABS((ABS(Q1)=ABS(Q))
)*ABS(Q)
```

```
  450 IF T>HM OR X=X2% AND Y=Y2%
 THEN D(I)=DIR:I=I+1:D(I)=0:FLAG
=1:HM=T:X2%=X:Y2%=Y
  460 DIR=DIR+1:IF DIR<9 THEN 39
0
  470 NEXT:NEXT
  480 IF FLAG=0 THEN PRINT TAB(7
,29)SPC(20);TAB(7,29)"I can't mo
ve ! ";:T%=TIME:REPEATUNTILTIME-
T%>300:*FX15,1
  490 IF FLAG=0 AND PM%=1 THEN P
ROCend ELSE PM%=0
  500 IF FLAG=0 THEN 90
  510 REM _____ xiii _____
____
  520 PRINTTAB(17,29)SPC(10);TAB
(7,29)"My move ";Y2%;",";CHR$(X2
%+96);:Y=Y2%:X=X2%:*FX15,1
  530 PROCcounters(1,Y,X):D%=INK
EY(150)
  540 B(Y,X)=3:I=1:PROCcounters(
0,Y,X)
  550 DIR=D(I)
  560 PROCdirs
  570 B(Y+Q,X+Q1)=3:PROCcounters
(0,Y+Q,X+Q1)
  580 Q=Q+P:Q1=Q1+P1
  590 IF B(Y+Q,X+Q1)<>3 THEN 570
  600 I=I+1:IF D(I)<>0 THEN 550
  610 FORX%=1 TO 9:D(X%)=0:NEXT
  620 PROCmv
  630 *FX 15,1
  640 GOTO90
  650 REM _____
____
  660 DEF PROCboard
  670 VDU 19,13,6;0;19,2,2;0;:GC
OL 0,129:CLG:GCOL 0,2:COLOUR 129
:COLOUR 0:Y%=-1
  680 IF RND(1)>.5 THEN 700
  690 FOR X%=-1 TO 400 STEP 4:MO
VE 640-X%,562+Y%:DRAW 640+X%,562
+Y%:DRAW 640+X%,562-Y%:DRAW640-X
%,562-Y%:DRAW 640-X%,562+Y%:Y%=Y
%+4:NEXT:GOTO710
  700 MOVE 240,162:MOVE 240,162:
PLOT 85,1040,162:PLOT 85,240,162
:PLOT 85,1040,962:PLOT 85,240,96
2
  710 GCOL 0,0:FOR X%=240 TO 104
0 STEP 100:MOVE X%,962:DRAW X%,1
62:NEXT:FOR Y%=162 TO 962 STEP 1
00:MOVE 240,Y%:DRAW 1040,Y%:NEXT
  720 A$="abcdefgh":VDU 5:FORX%=
1 TO 8:MOVE X%*100+170,1002:PRIN
T;MID$(A$,X%,1):MOVE 200,ABS(X%-
9)*100+122:PRINT;X%:NEXT:VDU 4
  730 FOR X%=440 TO 840 STEP 400
:FOR Y%=362 TO 762 STEP 400:FOR
X1%=X%-5 TO X%+10:MOVE X1%,Y%+8:
DRAW X1%,Y%-7:NEXT:NEXT:NEXT
  740 PROCcounters(3,4,4):PROCco
unters(3,5,5):PROCcounters(0,4,5
):PROCcounters(0,5,4)
```

```
  750 ENDPROC
  760 DEF PROCarrays
  770 DIM B(9,9),V(8,8),D(9),Q(8
),P(8)
  780 X%=0
  790 FORX%=1 TO 8:FORY%=1 TO 8:
READ V(Y%,X%):B(Y%,X%)=0:NEXT:NE
XT
  800 FORX%=0 TO 9:B(0,X%)=-1:B(
9,X%)=-1:B(X%,0)=-1:B(X%,9)=-1:N
EXT:B(4,4)=1:B(5,5)=1:B(4,5)=3:B
(5,4)=3
  810 FOR X%=1 TO 8:READ Q(X%):N
EXT:FORX%=1 TO 8:READ P(X%):NEXT
```



The BBC Micro can now give your children a private education.

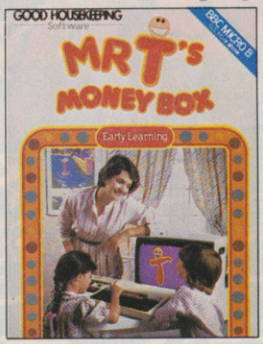
The BBC Microcomputer now accounts for 80% of the computers being ordered under the current D.O.I. Primary School Scheme.

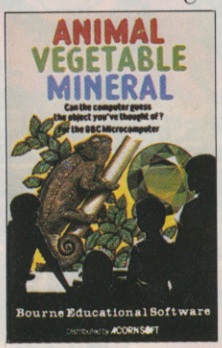
It's also the computer which a rapidly increasing number of people are choosing for their homes.

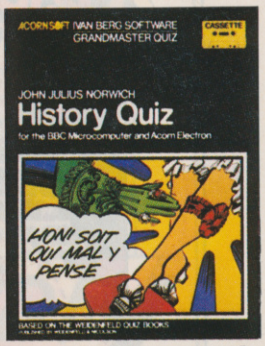
One of the reasons for its success is that it makes learning highly entertaining for everybody. From children who are getting to grips with the alphabet, to adults who want a gentle but intensive introduction to the complex world of computing.

Now, there's a substantial new catalogue of educational programs specially for the BBC Microcomputer.

It has been developed by Acornsoft, the software division of Acorn Computers who manufacture the BBC Micro.







Making faces without getting scolded.

With the new Facemaker program, your children can make over a million faces. It's like an identi-kit, allowing them to depict anyone they want. They start by choosing the eyes. Then they can choose the mouth, the ears, the nose, the facial outline and the hairstyle.

And if they really fancy dressing up, they can add earrings and hats.

In doing all this, they learn to read and spell, as well as developing their powers of description.

The money program, two games for the price of one.

Mr. T. is an engaging little figment of the microchip who can teach your children all the complexities of our coinage system.

His Money Box program has two games, each of which can be played at different levels.

In Money Match, the challenge is to collect a set of coins, matching them according to shape, size and value.

In Money Box, you can give your child and Mr. T. a helping hand to get all the coins on the screen into the box. (It's always different, because the coins on the screen are based on the small change you have to hand.)

A chance to teach the Micro a thing or two.

With the Animal, Vegetable, Mineral program, the children can get the computer guessing.

They think of an object. The BBC Micro has to decide what it is.

If it doesn't come up with the answer, the children can keep giving it hints.

In doing so, they are encouraged to question the difference between such things as crocodiles and alligators, or whether oil is vegetable or mineral.

The program also encourages them to consult reference books so that they can ask the computer increasingly tough questions.

Questions on Julius Caesar from J. Julius Norwich.

John Julius Norwich's History Quiz is one of the new BBC Micro Grandmaster quiz series which also covers theatre, crime and detection, music, science fiction and royalty.

On the history front, there are 300 brain-testing questions, covering all aspects of British history from Julius Caesar to Margaret Thatcher.

And to increase the educational value, Mr. Norwich has posed the questions from angles which will give a broader understanding of events.

For the full catalogue, clip the coupon.

There are thirty more new BBC Micro programs in Acornsoft's new catalogue.

For a free copy, complete the coupon, or telephone 0933-79300. Or ask your local BBC Micro dealer.

If you're not yet a BBC Micro owner, you can get full details of the computer at the same time.

To Acornsoft, c/o Vector Marketing, Denington Estate, Wellingborough, Northants NN8 2RL. Please send me the new Acornsoft catalogue "At Home With The BBC Microcomputer."

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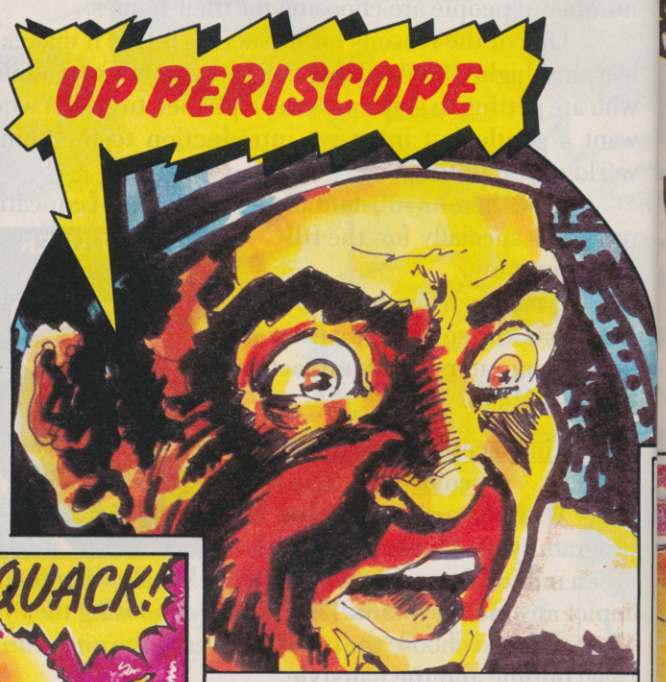
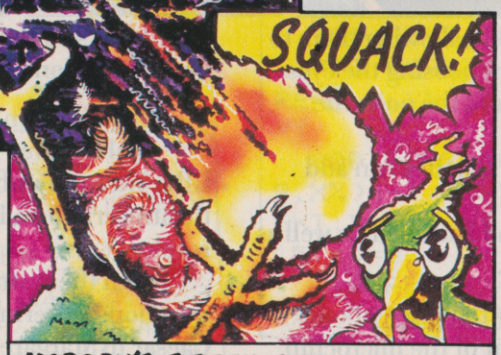




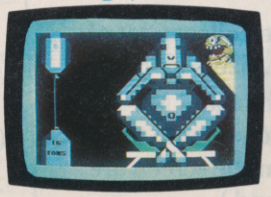
NOBODY'S GETTING THEIR CLAWS ON MY JEWEL!

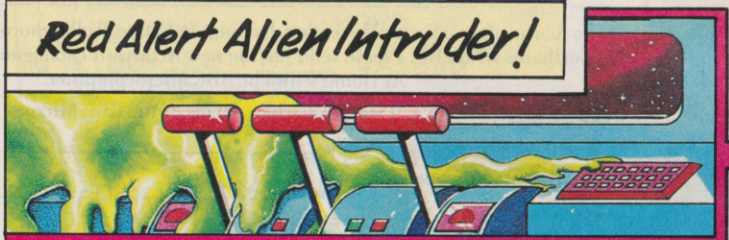
SONAR contact and the depth charges tumble

Death lurked under every wave

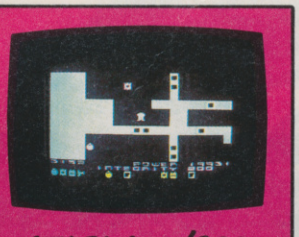
Red Alert Alien Intruder!

RUNS ON COMMODORE 64





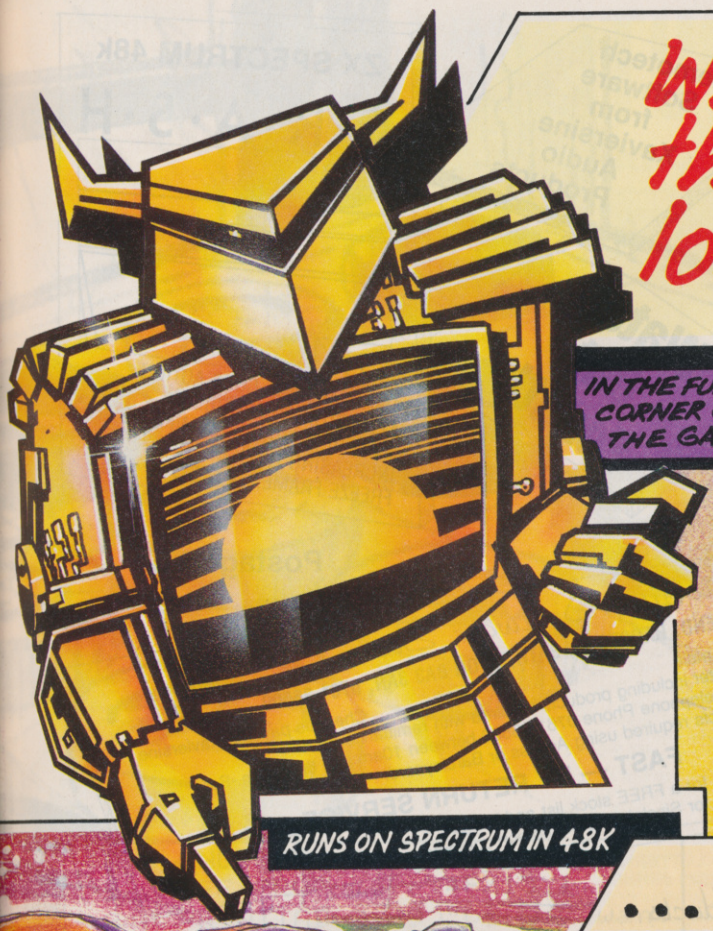
...I must keep it out of the main corridors



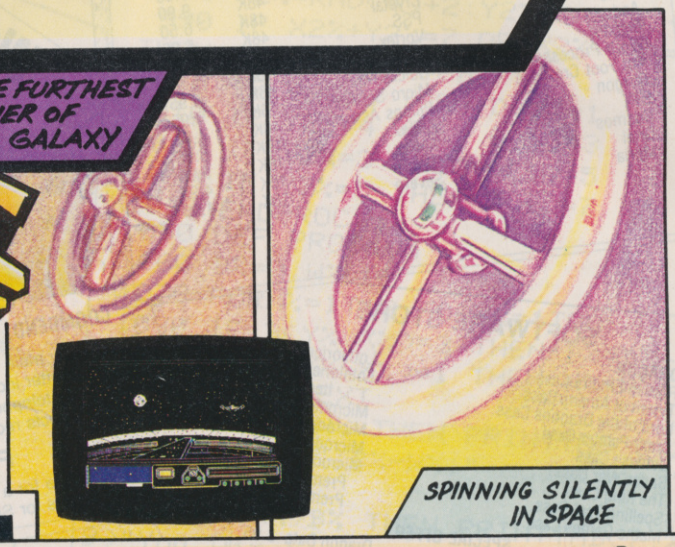
ATARI 400/800 WITH 48K

RUNS ON DRAGON 32

What's worse than being lost in space...



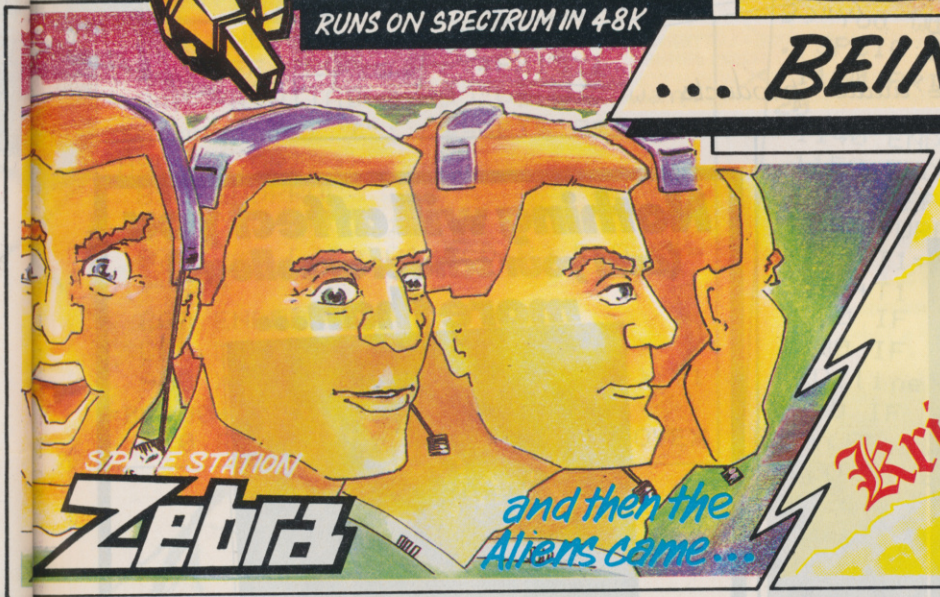
IN THE FURTHEST CORNER OF THE GALAXY



SPINNING SILENTLY IN SPACE

RUNS ON SPECTRUM IN 48K

... BEING FOUND!



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ZX SPECTRUM 48k

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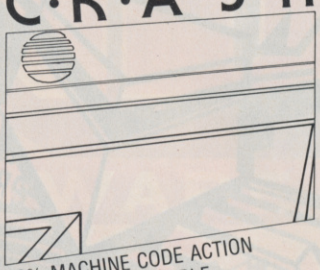

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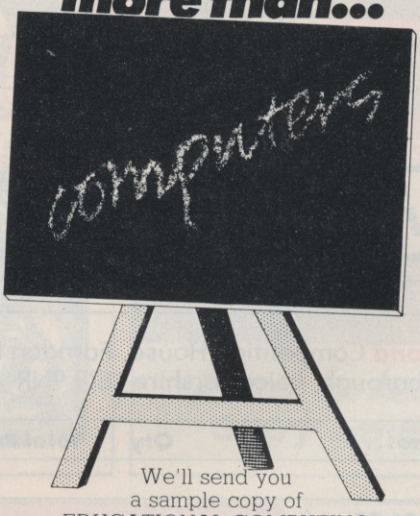

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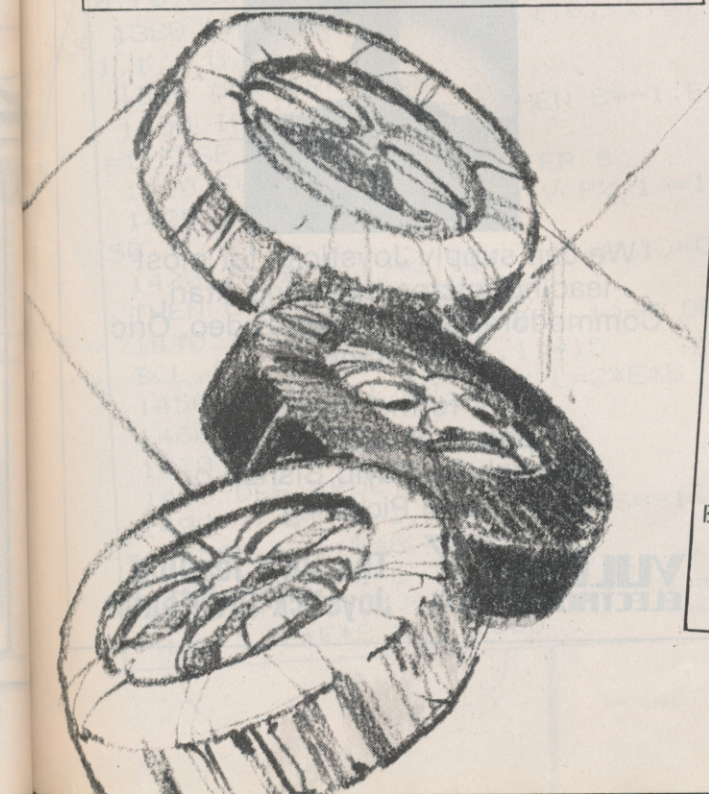
```
  820 ENDPROC
  830 DEF PROCumove:*FX15,1
  840 PRINTTAB(7,29)"Do you want
 to move 1st ?";:A$=GET$:A$=CHR$
(ASC(A$)OR32)
  850 ENDPROC
  860 DEF PROCdirs
  870 Q=D(DIR):Q1=P(DIR):P=0:P1=
01
  880 ENDPROC
  890 DEF PROCcounter$(C,B,A)
  900 X1=A*100+190:B=ABS(B-9):Y1
=B*100+112:GCOL 0,C:Y%=-1
  910 FORX%=-1 TO 30 STEP4:MOVEX
```



```
1-X%,Y1+Y%:DRAWX1+X%,Y1+Y%:DRAWX
1+X%,Y1-Y%:DRAWX1-X%,Y1-Y%:DRAWX
1-X%,Y1+Y%:Y%=Y%+4:SOUND&11,-15,
2*(X%+2),1:NEXT
  920 ENDPROC
  930 DEF PROCmv
  940 MV=MV+1
  950 IF MV=64 THEN PROCend
  960 ENDPROC
  970 DEF PROCrandom
  980 X2%=RND(4)+2:Y2%=RND(4)+2
  990 IF X2%+Y2%=7 OR X2%+Y2%=11
THEN 1000 ELSE 980
 1000 IF Y2%=6 THEN D(1)=1
 1010 IF Y2%=4 THEN D(1)=3
 1020 IF Y2%=3 THEN D(1)=5
 1030 IF Y2%=5 THEN D(1)=7
 1040 ENDPROC
 1050 DEF PROCend
 1060 B%=0:W%=0
 1070 FORX%=1TO8:FORY%=1TO8
 1080 IF B(Y%,X%)=3 THEN B%=B%+1
 1090 IF B(Y%,X%)=1 THEN W%=W%+1
 1100 NEXT:NEXT
 1110 IF B%>W% THEN PRINTTAB(7,2
9)"I win by ";B%-W%;" counters."
SPC10:END
 1120 IF W%>B% THEN PRINTTAB(7,2
9)"You win by ";W%-B%;" counters
."SPC10:END
 1130 PRINTTAB(7,29)"A draw."SPC
20
 1140 END
 1150 ENDPROC
 1160 DEF PROCupdate
 1170 FORP%=2 TO 7
 1180 T1=B(P%-1,1):T2=B(P%+1,1):
T3=T2+T1
 1190 IF T3=4 THEN V(P%,1)=15
 1200 IF T3=1 AND B(P%,1)=0 THEN
 PROCline1
 1210 IF T3=6 OR T3=2 OR T3=3 TH
EN V(P%,1)=100
 1220 T1=B(P%-1,8):T2=B(P%+1,8):
T3=T2+T1
 1230 IF T3=6 OR T3=2 OR T3=3 TH
EN V(P%,8)=100
 1240 IF T3=4  THEN V(P%,8)=15
 1250 IF T3=1 AND B(P%,8)=0 THEN
 PROCline2
 1260 T1=B(1,P%-1):T2=B(1,P%+1):
T3=T2+T1
 1270 IF T3=6 OR T3=2 OR T3=3 TH
EN V(1,P%)=100
 1280 IF T3=4 THEN V(1,P%)=15
 1290 IF T3=1 AND B(1,P%)=0 THEN
 PROCline3
 1300 T1=B(8,P%-1):T2=B(8,P%+1):
T3=T2+T1
 1310 IF T3=6 OR T3=2 OR T3=3 TH
EN V(8,P%)=100
 1320 IF T3=4 THEN V(8,P%)=15
 1330 IF T3=1 AND B(8,P%)=0 THEN
 PROCline4
```

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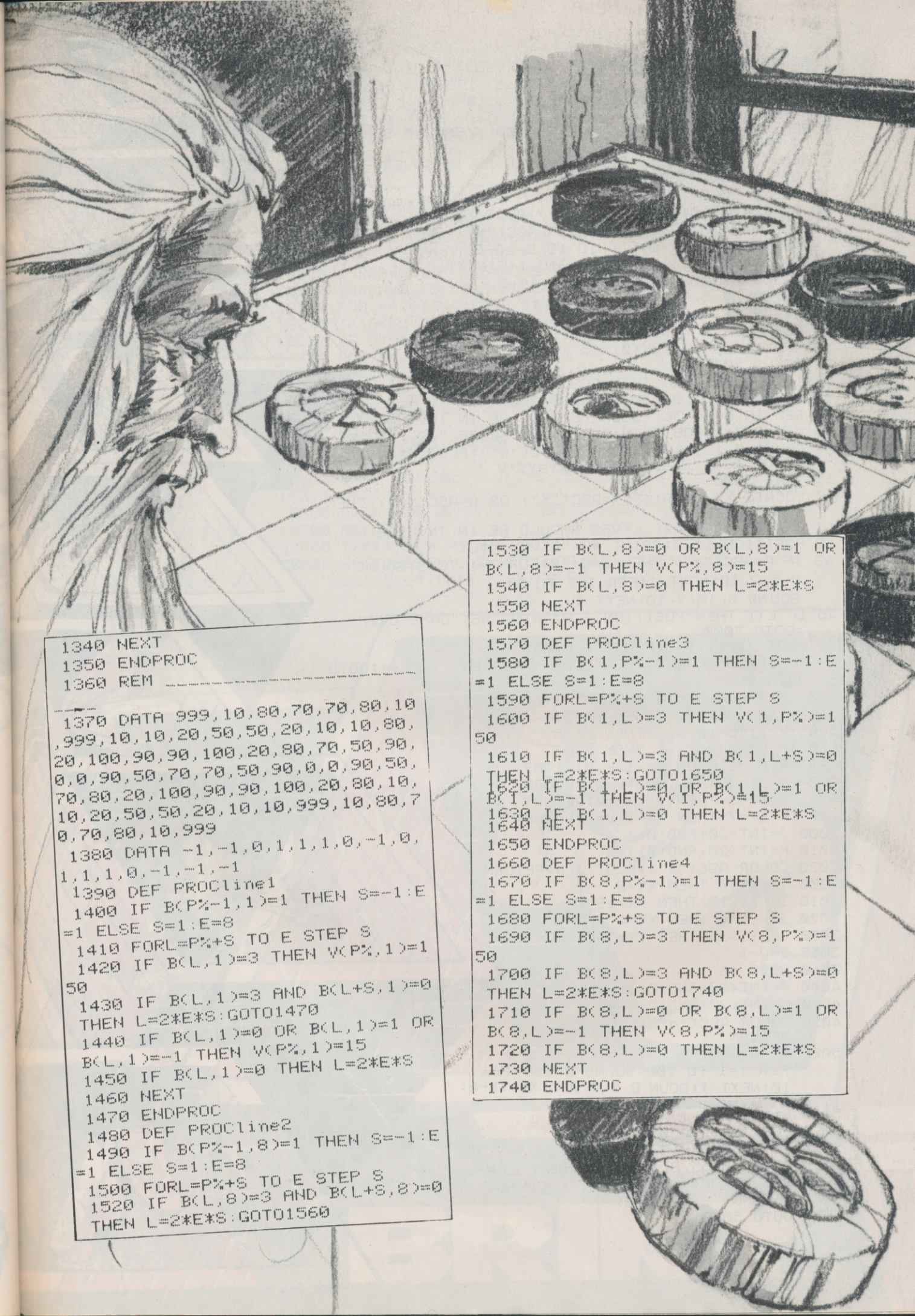

```
1340 NEXT
1350 ENDPROC
1360 REM _____
_____
1370 DATA 999,10,80,70,70,80,10
,999,10,10,20,50,50,20,10,10,80,
20,100,90,90,100,20,80,70,50,90,
0,0,90,50,70,70,50,90,0,0,90,50,
70,80,20,100,90,90,100,20,80,10,
10,20,50,50,20,10,10,999,10,80,7
0,70,80,10,999
1380 DATA -1,-1,0,1,1,1,0,-1,0,
1,1,1,0,-1,-1,-1
1390 DEF PROCline1
1400 IF B(P%-1,1)=1 THEN S=-1:E
=1 ELSE S=1:E=8
1410 FORL=P%+S TO E STEP S
1420 IF B(L,1)=3 THEN V(P%,1)=1
50
1430 IF B(L,1)=3 AND B(L+S,1)=0
THEN L=2*E*S:GOTO1470
1440 IF B(L,1)=0 OR B(L,1)=1 OR
B(L,1)=-1 THEN V(P%,1)=15
1450 IF B(L,1)=0 THEN L=2*E*S
1460 NEXT
1470 ENDPROC
1480 DEF PROCline2
1490 IF B(P%-1,8)=1 THEN S=-1:E
=1 ELSE S=1:E=8
1500 FORL=P%+S TO E STEP S
1520 IF B(L,8)=3 AND B(L+S,8)=0
THEN L=2*E*S:GOTO1560
```

```
1530 IF B(L,8)=0 OR B(L,8)=1 OR
B(L,8)=-1 THEN V(P%,8)=15
1540 IF B(L,8)=0 THEN L=2*E*S
1550 NEXT
1560 ENDPROC
1570 DEF PROCline3
1580 IF B(1,P%-1)=1 THEN S=-1:E
=1 ELSE S=1:E=8
1590 FORL=P%+S TO E STEP S
1600 IF B(1,L)=3 THEN V(1,P%)=1
50
1610 IF B(1,L)=3 AND B(1,L+S)=0
THEN L=2*E*S:GOTO1650
1620 IF B(1,L)=0 OR B(1,L)=1 OR
B(1,L)=-1 THEN V(1,P%)=15
1630 IF B(1,L)=0 THEN L=2*E*S
1640 NEXT
1650 ENDPROC
1660 DEF PROCline4
1670 IF B(8,P%-1)=1 THEN S=-1:E
=1 ELSE S=1:E=8
1680 FORL=P%+S TO E STEP S
1690 IF B(8,L)=3 THEN V(8,P%)=1
50
1700 IF B(8,L)=3 AND B(8,L+S)=0
THEN L=2*E*S:GOTO1740
1710 IF B(8,L)=0 OR B(8,L)=1 OR
B(8,L)=-1 THEN V(8,P%)=15
1720 IF B(8,L)=0 THEN L=2*E*S
1730 NEXT
1740 ENDPROC
```

```
1 SCREEN=1
2 L=5
3 HI=-1
5 XX=10:YY=10
8 REM IN LINES 13,31,37,40 & 5000,% SHOULD BE IN
  INVERSE
9 REM IN LINE 40 & 4020,a SHOULD BE IN INVERSE
10 GOSUB 18000:GOSUB 30000:N=1
11 GOSUB 6000
12 XX=10:YY=10:COLOR ASC("@"):PLOT XX,YY
13 FOR G=0 TO SCREEN-1:COLOR ASC("%"):PLOT 0+G,1+G:
   DRAWTO 19-G,1+G:DRAWTO 19-G,23-G
14 DRAWTO 0+G,23-G:DRAWTO 0+G,1+G:NEXT G
15 SETCOLOR 0,8,2:SETCOLOR 1,14,5
16 SETCOLOR 3,0,0
17 SETCOLOR 2,3,4
18 SETCOLOR 4,0,10
19 IF N=1 AND STICK(0)=15 THEN 19
21 GOSUB 500
24 IF RND(0))0.93 THEN GOSUB 4000
25 IF RND(0))0.93 THEN GOSUB 2000
32 REM IN LINE 34, SCORE SHOULD BE IN INVERSE
34 N=0:Q=Q+1:POSITION 0,0:? #6;"SCORE ";Q
37 SOUND 0,121,10,10:COLOR ASC("%"):PLOT XX,YY:
   COLOR ASC("@"):XX=XX+H:YY=YY+V
38 TRAP 3000
40 LOCATE XX,YY,A:IF A=ASC("%") OR A=ASC("a") THEN
   GOSUB 5000
41 REM IN LINE 42, LIVES SHOULD BE IN INVERSE
42 POSITION 11,0:PRINT #6;"LIVES ";L;" "
43 IF A=ASC("z") THEN Q=Q+10:FOR I=1 TO 5:SOUND
   0,5,2,10:NEXT I:FOR I=1 TO 5:
   SOUND 0,10,2,10:NEXT I
45 IF L(1 THEN POSITION 3,9:PRINT #6;"GAME OVER!!"
   :GOTO 7000
46 PLOT XX,YY:T=0:SOUND 0,0,0,0
48 IF Q)100*SCREEN THEN SCREEN=SCREEN+1:L=L+1:GOTO 11
50 GOTO 21
500 IF STICK(0)=14 THEN ST=1
520 IF STICK(0)=7 THEN ST=3
540 IF STICK(0)=13 THEN ST=5
560 IF STICK(0)=11 THEN ST=7
580 IF ST=1 THEN V=-1:H=0:RETURN
600 IF ST=3 THEN H=1:V=0:RETURN
620 IF ST=5 THEN V=1:H=0:RETURN
640 IF ST=7 THEN H=-1:V=0:RETURN
2000 J=INT(20*RND(0))
2010 K=INT(20*RND(0))+4
2020 COLOR ASC("z"):PLOT J,K:RETURN
3000 IF XX(0 THEN XX=0
3010 IF XX)19 THEN XX=19
3020 IF YY(4 THEN YY=4
3030 IF YY)23 THEN YY=23
3035 Q=Q-1
3040 GOTO 46
4000 J=INT(20*RND(0))
4010 K=INT(20*RND(0))+4
4020 COLOR ASC("a"):PLOT J,K:
     RETURN
5000 IF A=ASC("%") THEN L=L-1:Q=Q-1:
     FOR I=1 TO 100:SOUND 0,255,10,
     10:NEXT I:SOUN D 0,0,0,0:XX=XX-H:
     YY=YY-V:RETURN
5010 L=L-2:Q=Q-1
5020 FOR I=15 TO 0 STEP -0.5
5025 SETCOLOR 4,15,I
5030 SOUND 0,55,8,I:NEXT I:SETCOLOR 4,0,10
5035 COLOR ASC(" "):PLOT XX+H,YY+V
5040 RETURN
5050 GOTO 5050
```

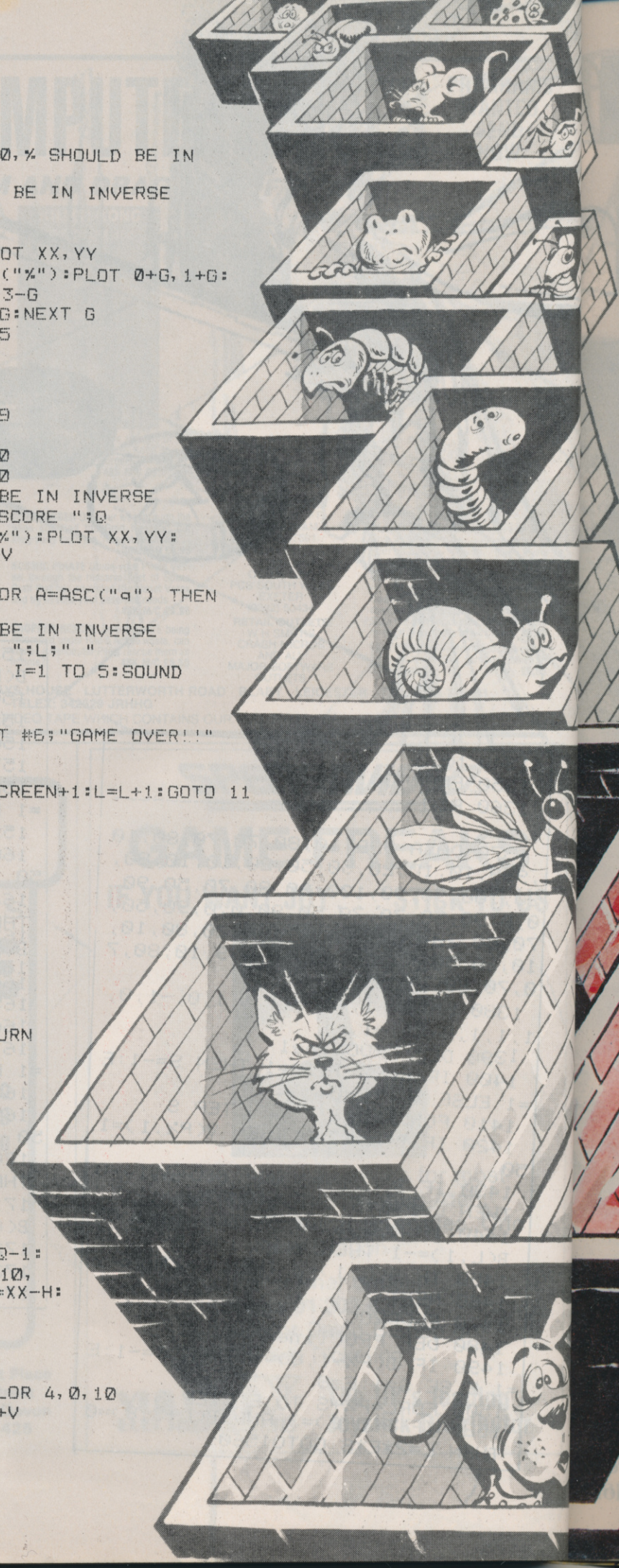

Illustration: Terry Rogers

Briky is a happy little bricklayer. He's never more content than when he's got a wall to build. But there are things that upset him — bombs and moles. Both are capable of destroying his carefully constructed walls. You can help Briky build a brave new world by guiding him around the screen. You cannot stop — so you have to be careful not to bump into your own walls. Occasionally those moles and bombs appear at random on the screen. If you build your wall over a mole, you'll get a bonus of 10 points. If you hit a bomb, you'll lose two of your five lives. After every 100 points you get a bonus life and a new screen to play in. But each screen gets smaller — making Briky's life harder. Full instructions are included in the program.

```
6000 FOR G=0 TO 15:COLOR ASC(" "):PLOT 0+G,0+G:DRAWTO
     19-G,0+G:DRAWTO 19-G,23-G
6010 DRAWTO 0+G,23-G:DRAWTO 0+G,0+G:NEXT G:RETURN
7000 IF Q)HI THEN HI=Q
7005 FOR I=1 TO 500:NEXT I:GOSUB 30000
7010 L=5:Q=0:SCREEN=1:GOTO 11
18000 REM NEW CHAR SET
18010 REM ************
18015 RESTORE 18320
18020 DIM A(8),ANS$(3),R$(1),F$(15),NAME$(12),ANS2$(3)
18040 MEMTOP=PEEK(106):GRTOP=MEMTOP-4
18060 POKE 106,GRTOP:GRAPHICS 1+16:CHROM=PEEK(756)*256
18140 CHRAM=GRTOP*256:POKE 756,GRTOP
18210 FOR N=0 TO 1023:POKE CHRAM+N,PEEK(CHROM+N):NEXT N
18260 FOR K=1 TO 4:READ R$:R=ASC(R$)
18270 IF R<32 THEN R=R+64
18280 IF R<96 THEN IF R)31 THEN R=R-32
18300 FOR I=0 TO 7:READ A:A(I)=A:B=I+R*8+256*GRTOP:
      POKE B,A:NEXT I:NEXT K
18320 DATA %
18330 DATA 126,126,126,0,231,231,231,0
18335 DATA @
18340 DATA 126,129,165,129,195,189,129,126
18350 DATA Z
18360 DATA 126,255,219,255,255,231,219,255
18370 DATA Q
18380 DATA 4,8,16,24,126,255,126,24
18500 RETURN
20000 XX=XX-H:YY=YY-V:RETURN
30000 SETCOLOR 0,8,2:SETCOLOR 2,3,4:SETCOLOR 4,0,10:
      SETCOLOR 1,14,5:SETCOLOR 3,0,0
```

RUNS ON AN ATARI 400/800 IN 16K

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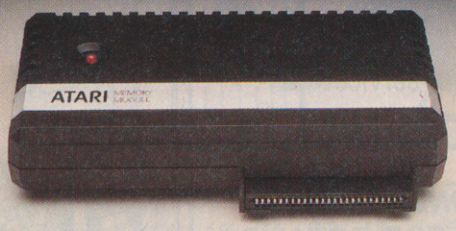

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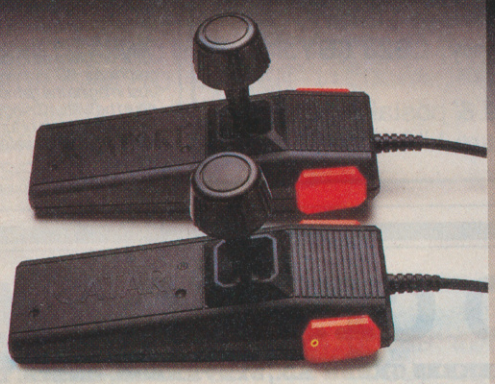

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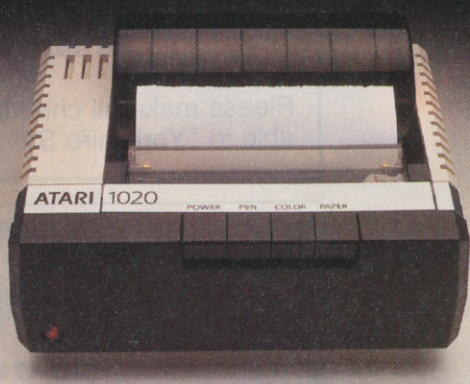

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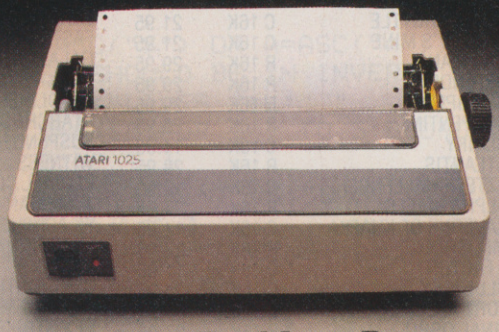

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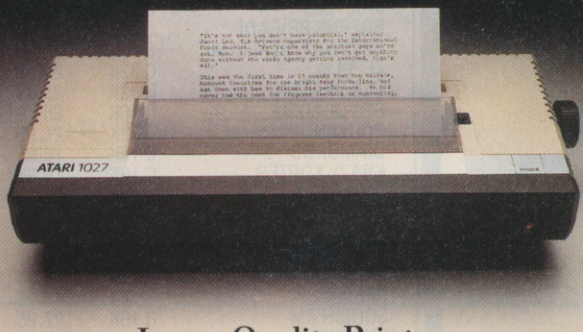

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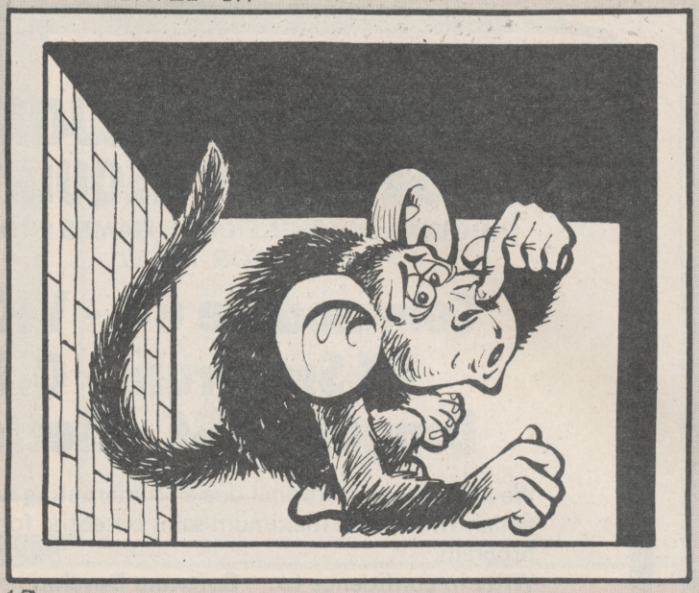
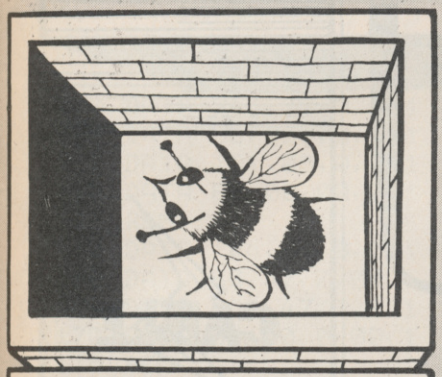
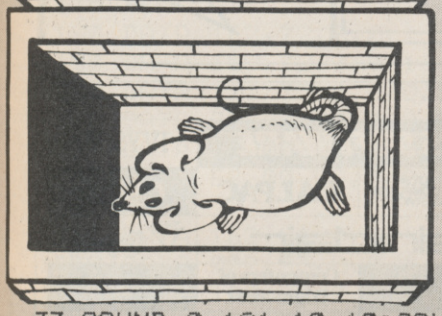
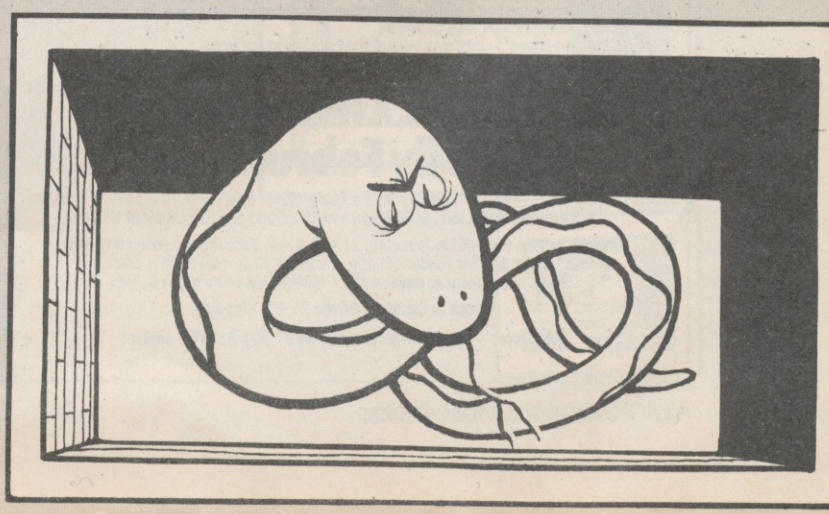
```
30002 GOSUB 6000
30003 POSITION 0,1
30005 REM ALL OF THE FOLLOWING SHOULD BE PRINTED IN
      INVERSE,EXCEPT z & start
30006 ? #6;" "
30007 ? #6;" "
30008 ? #6;" "
30009 ? #6;"       z"
30010 ? #6;" %%  %%  % %  z % %"
30020 ? #6;" % % % % % %  % % %"
30030 ? #6;" % % % % % % % %z%"
30040 ? #6;" %%  %%  % %%    %"
30050 ? #6;" % % % % % %%q   %"
30060 ? #6;" %z% % % % % %   %"
30070 ? #6;" %%  % % % %  %q %"
30080 ? #6;" "
30085 ? #6;" hi score = ";HI+1
30087 ? #6;" "
30090 ? #6;" PRESS start TO PLAY"
30100 IF PEEK(53279)<>6 THEN 30100
30120 RETURN
```







```
1 SCREEN=1
2 L=5
3 HI=-1
5 XX=10:YY=10
8 REM IN LINES 13,31,37,40 & 5000,% SHOULD BE IN
  INVERSE
9 REM IN LINE 40 & 4020,q SHOULD BE IN INVERSE
10 GOSUB 18000:GOSUB 30000:N=1
11 GOSUB 6000
12 XX=10:YY=10:COLOR ASC("@"):PLOT XX,YY
13 FOR G=0 TO SCREEN-1:COLOR ASC("%"):PLOT 0+G,1+G:
   DRAWTO 19-G,1+G:DRAWTO 19-G,23-G
14 DRAWTO 0+G,23-G:DRAWTO 0+G,1+G:NEXT G
15 SETCOLOR 0,8,2:SETCOLOR 1,14,5
16 SETCOLOR 3,0,0
17 SETCOLOR 2,3,4
18 SETCOLOR 4,0,10
19 IF N=1 AND STICK(0)=15 THEN 19
21 GOSUB 500
24 IF RND(0)>0.93 THEN GOSUB 4000
25 IF RND(0)>0.93 THEN GOSUB 2000
32 REM IN LINE 34, SCORE SHOULD BE IN INVERSE
34 N=0:Q=Q+1:POSITION 0,0:? #6;"SCORE ";Q
37 SOUND 0,121,10,10:COLOR ASC("%"):PLOT XX,YY:COLOR ASC("@"):XX=XX+H:
   YY=YY+V
38 TRAP 3000
40 LOCATE XX,YY,A:IF A=ASC("%") OR A=ASC("q") THEN GOSUB 5000
41 REM IN LINE 42, LIVES SHOULD BE IN INVERSE
42 POSITION 11,0:PRINT #6;"LIVES ";L;" "
43 IF A=ASC("z") THEN Q=Q+10:FOR I=1 TO 5:SOUND 0,5,2,10:NEXT I:FOR I=1
   TO 5:SOUND 0,10,2,10:NEXT I
45 IF L<1 THEN POSITION 3,9:PRINT #6;"GAME OVER!!":GOTO 7000
46 PLOT XX,YY:T=0:SOUND 0,0,0,0
48 IF Q>100*SCREEN THEN SCREEN=SCREEN+1:L=L+1:GOTO 11
50 GOTO 21
500 IF STICK(0)=14 THEN ST=1
520 IF STICK(0)=7 THEN ST=3
540 IF STICK(0)=13 THEN ST=5
560 IF STICK(0)=11 THEN ST=7
580 IF ST=1 THEN V=-1:H=0:RETURN
600 IF ST=3 THEN H=1:V=0:RETURN
620 IF ST=5 THEN V=1:H=0:RETURN
640 IF ST=7 THEN H=-1:V=0:RETURN
900 SPEED=0.7
```



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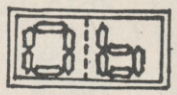

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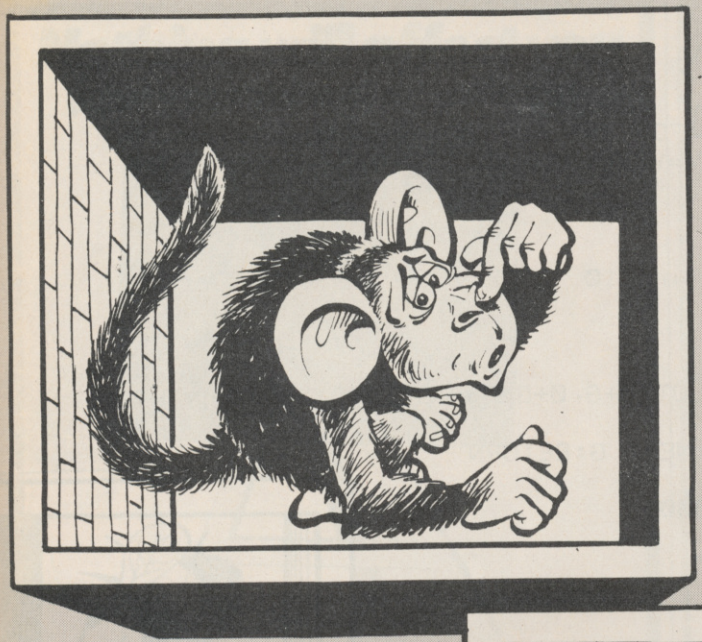
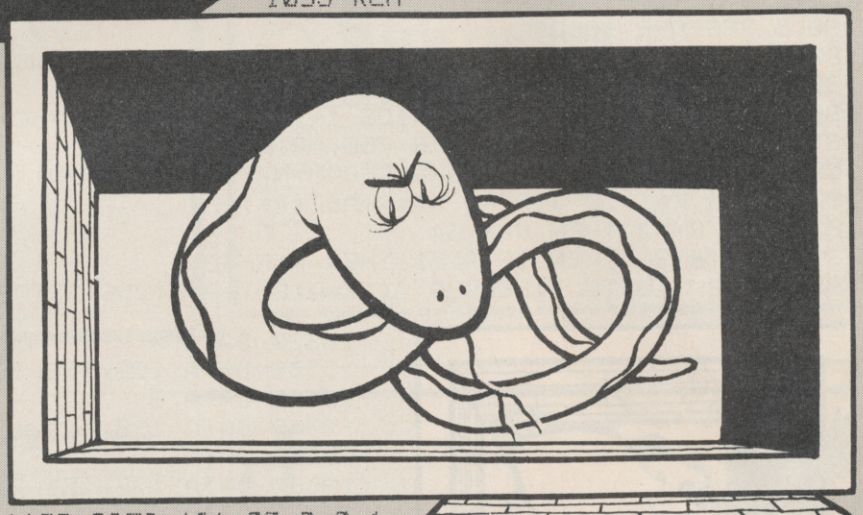
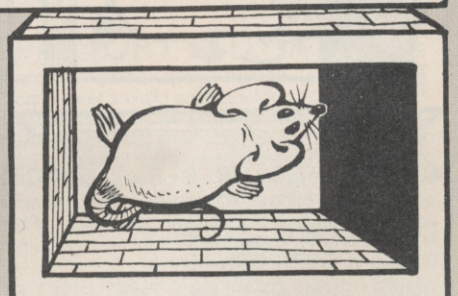
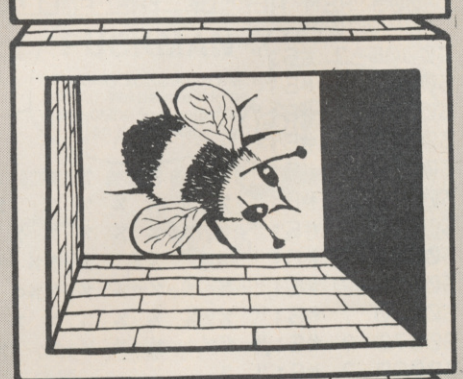


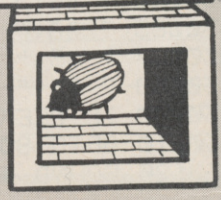
```
 905 RESTORE 1000
 910 TRAP 30120:READ A,B,C,D,E
 912 IF E=0.5 THEN E=0.35
 915 SOUND 1,B,10,7
 917 SOUND 2,C,10,7
 918 SOUND 3,D,10,7
 920 FOR I=15 TO 2 STEP -(SPEED/E)
 930 SOUND 0,A,10,I
 950 NEXT I:F=F+1:GOTO 910
1000 DATA 162,64,0,0,1
1010 DATA 81,64,00,0,1
1020 DATA 128,64,0,0,.5
1030 DATA 60,000,0,0,.5
1040 DATA 57,000,0,0,.5
1050 DATA 53,00,00,0,.5
1055 REM
1060 DATA 40,128,0,0,1
1070 DATA 53,00,00,0,1
1080 DATA 60,108,0,0,1
1090 DATA 64,00,00,0,1
1095 REM
```



```
1100 DATA 243,72,0,0,1
1110 DATA 96,000,0,0,1
1120 DATA 121,00,0,0,1
1130 DATA 60,00,00,0,1
1135 REM
1140 DATA 144,47,0,0,1
1150 DATA 60,47,0,00,1
1160 DATA 121,47,0,0,1
1170 DATA 60,00,0,00,1
1175 REM
1180 DATA 162,72,0,0,1
1190 DATA 108,72,0,0,1
1200 DATA 121,72,0,0,0.5
1210 DATA 76,00,00,0,0.5
1220 DATA 72,00,00,0,0.5
1230 DATA 68,00,00,0,0.5
1235 REM
1240 DATA 162,64,0,0,1
1250 DATA 000,53,0,0,1
1260 DATA 128,60,0,0,1
1270 DATA 000,64,0,0,1
1275 REM
1280 DATA 193,72,0,0,1
1290 DATA 000,81,0,0,1
1300 DATA 114,85,0,0,1
1310 DATA 000,81,0,0,1
1315 REM
1320 DATA 217,64,0,0,1
1330 DATA 81,64,00,0,1
1340 DATA 121,72,85,0,1
1350 DATA 108,00,0,0,1
1360 DATA 162,64,0,0,1
1370 DATA 81,64,00,0,1
1380 DATA 128,64,0,0,.5
1390 DATA 60,000,0,0,.5
1400 DATA 57,000,0,0,.5
1410 DATA 53,00,00,0,.5
1415 REM
1420 DATA 40,128,0,0,1
1430 DATA 53,00,00,0,1
1440 DATA 60,108,0,0,1
1450 DATA 64,00,00,0,1
1455 REM
1460 DATA 243,72,0,0,1
1470 DATA 000,72,0,0,1
```

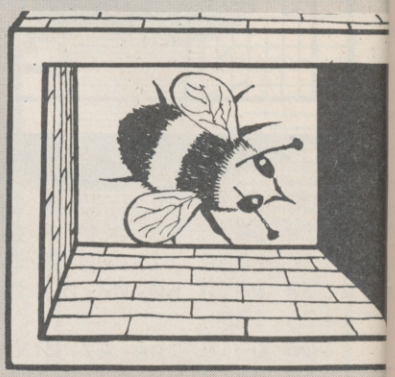


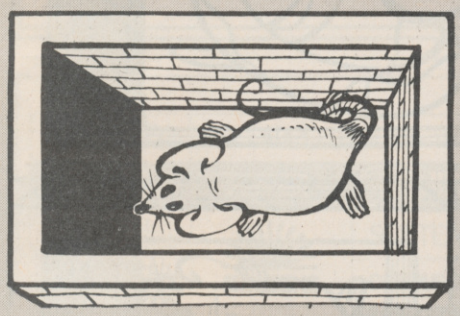




```
1480 DATA 121,00,0,0,1
1490 DATA 60,00,00,0,1
1495 REM
1500 DATA 153,47,0,0,1
1510 DATA 64,47,00,0,1
1520 DATA 108,47,0,0,1
1530 DATA 53,000,0,0,1
1535 REM
1540 DATA 144,57,0,0,1
1550 DATA 000,60,0,0,1
1560 DATA 121,64,0,0,1
1570 DATA 000,72,0,0,1
1575 REM
1580 DATA 217,81,0,0,1
1590 DATA 000,85,0,0,1
1600 DATA 108,64,0,0,1
1610 DATA 000,72,0,0,1
1615 REM
1620 DATA 162,72,0,0,1
1630 DATA 60,72,00,0,1
1640 DATA 81,128,0,0,1
2000 J=INT(20*RND(0))
2010 K=INT(20*RND(0))+4
2020 COLOR ASC("z"):PLOT J,K:RETURN
3000 IF XX<0 THEN XX=0
3010 IF XX>19 THEN XX=19
3020 IF YY<4 THEN YY=4
3030 IF YY>23 THEN YY=23
3035 Q=Q-1
```

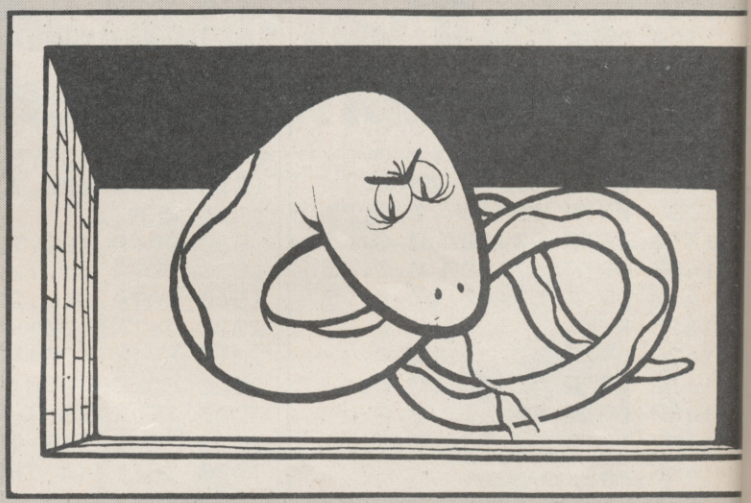
```
3040 GOTO 46
4000 J=INT(20*RND(0))
4010 K=INT(20*RND(0))+4
4020 COLOR ASC("q"):PLOT J,K:RETURN
5000 IF A=ASC("%") THEN L=L-1:Q=Q-1:FOR I=1 TO 100:SOUND 0,255,10,10:
     NEXT I:SOUND 0,0,0,0:XX=XX-H:YY=YY-V:RETURN
5010 L=L-2:Q=Q-1
5020 FOR I=15 TO 0 STEP -0.5
5025 SETCOLOR 4,15,I
5030 SOUND 0,55,8,I:NEXT I:SETCOLOR 4,0,10
5035 COLOR ASC(" "):PLOT XX+H,YY+V
5040 RETURN
5050 GOTO 5050
6000 FOR G=0 TO 15:COLOR ASC(" "):PLOT 0+G,0+G:DRAWTO 19-G,0+G:DRAWTO
     19-G,23-G
6010 DRAWTO 0+G,23-G:DRAWTO 0+G,0+G:NEXT G:RETURN
7000 IF Q>HI THEN HI=Q
7005 FOR I=1 TO 500:NEXT I:GOSUB 30000
7010 L=5:Q=0:SCREEN=1:GOTO 11
18000 REM NEW CHAR SET
18010 REM ************
18015 RESTORE 18320
18020 DIM A(8),ANS$(3),R$(1),F$(15),NAME$(12),ANS2$(3)
18040 MEMTOP=PEEK(106):GRTOP=MEMTOP-4
18050 POKE 106,GRTOP:GRAPHICS 1+16:CHROM=PEEK(756)*256
18140 CHRAM=GRTOP*256:POKE 756,GRTOP
18210 FOR N=0 TO 1023:POKE CHRAM+N,PEEK(CHROM+N):NEXT N
18260 FOR K=1 TO 4:READ R$:R=ASC(R$)
18270 IF R<32 THEN R=R+64
18280 IF R<96 THEN IF R>31 THEN R=R-32
18300 FOR I=0 TO 7:READ A:A(I)=A:B=I+R*8+256*GRTOP:POKE B,A:NEXT I:NEXT K
```





```
18320 DATA %
18330 DATA 126,126,126,0,231,231,231,0
18335 DATA ó
18340 DATA 126,129,165,129,195,189,129,126
18350 DATA Z
18360 DATA 126,255,219,255,255,231,219,255
18370 DATA Q
18380 DATA 4,8,16,24,126,255,126,24
18500 RETURN
20000 XX=XX-H:YY=YY-V:RETURN

30000 SETCOLOR 0,8,2:SETCOLOR 2,3,4:SETCOLOR 4,0,10:SETCOLOR 1,14,5:
      SETCOLOR 3,0,0
30002 GOSUB 6000
30003 POSITION 0,1
30005 REM ALL OF THE FOLLOWING SHOULD BE PRINTED IN INVERSE,EXCEPT z &
      start
30006 ? #6;"  "
30007 ? #6;"  "
30008 ? #6;"  "
30009 ? #6;"       z"
30010 ? #6;" %%  %%  % %  z % %"
30020 ? #6;" % % % % % %  % % %"
30030 ? #6;" % % % % % % %  %z%"
30040 ? #6;" %%  %%  % %%    %"
30050 ? #6;" % % % % % %%q   %"
30060 ? #6;" %z% % % % % %   %"
30070 ? #6;" %%  % % % %  %q %"
30080 ? #6;"  "
30085 ? #6;" hi score = ";HI+1
30087 ? #6;"  "
30090 ? #6;" PRESS start TO PLAY"
30100 IF PEEK(53279)<>6 THEN 30100
30110 GOTO 900
30120 SOUND 0,0,0,0:SOUND 1,0,0,0:SOUND 2,0,0,0:RETURN
```



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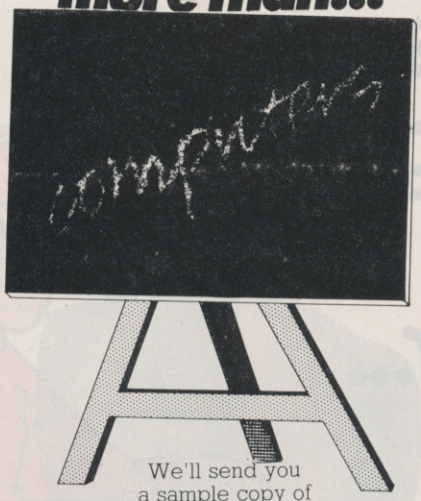

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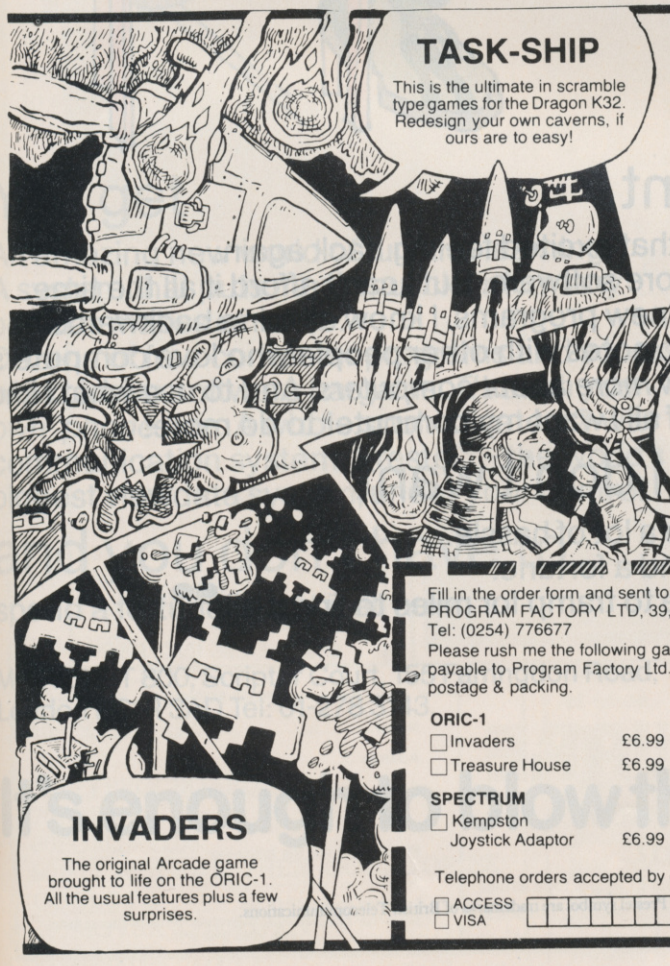

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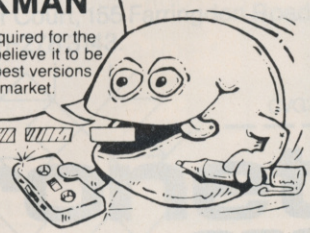

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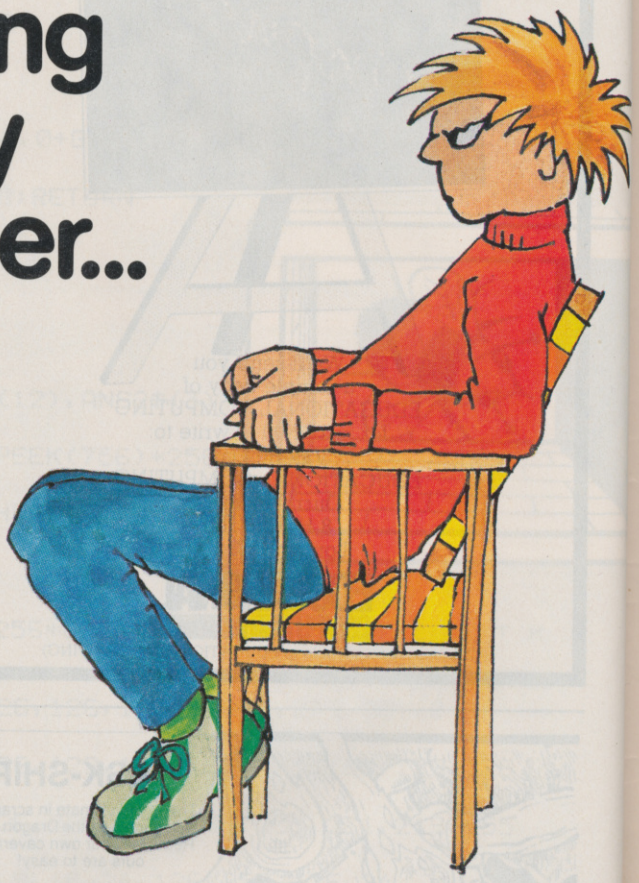

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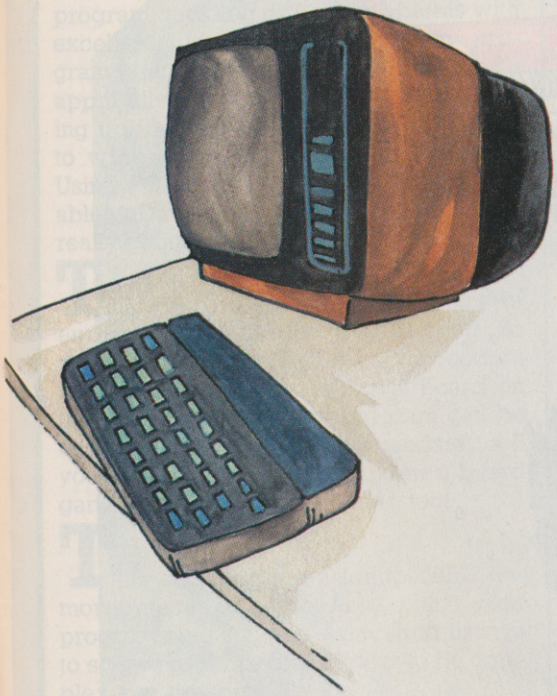

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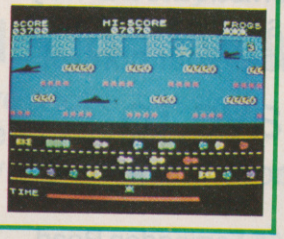

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This issue of *Computer and Video Games* is choc-a-bloc with masses of great games listings — 48 extra fun filled pages — so let's not hang about! Program Extra has two tips for micro-programmers and a new feature, Down to Basics, but let's kick off with a look at David Waterfield's game for the BBC — Reversi.

David Waterfield's game Reversi is a very good example of a well written program, tackling difficult problems with excellent ideas and short snappy programming. This is highlighted by David's approach to solving the problem of drawing up the playing board without having to write a game the length of a novel. Using FOR NEXT loops and lots of variables, David has managed to write a really compact little routine to do the job.

This has inspired Program Extra to encourage you to get programming. So we have come up with a short procedure to create a chess or draughts board on the BBC computer. The program can be easily modified to suit your needs. And if you feel like creating a brand new board game of your own it will help too!

This short program for the BBC demonstrates how it's possible, with a good programming style, to write short listings to solve problems that appear to be complex and tiresome.

Drawing a chess board is an excellent exercise to attempt, because it involves some tricky problems, but also requires the programmer to structure the routine or else succumb to writing reams of code and end up with a very messy game. The program uses two loops, one to draw each row of squares and the other to draw each column.

The IF . . . THEN statements are used to decide if a row begins with a black or white square and variables are used throughout to carry the drawing co-ordinates and the colour to be used for filling. Furthermore, the entire routine is held in a defined procedure which can be easily incorporated into any program with ease.

```
10MODE4
20Y=150:X=150
30A=1:T=100
40PROCBOARD
50END
60DEFPROCBOARD
70FORR=1TO8
80FORC=1TO8
90IFC MOD2=A THEN GCOL0,0ELSE
GCOL0,7
100MOVEX,Y:DRAWX,Y+T
110DRAWX+T,Y+T
120PLOT85,X+T,Y+T:X+T
130NEXTC
140Y=Y+T:X=150
150IFR MOD2=1 THEN A=0 ELSE A=1
160NEXTR
170ENDPROC
```

In our last issue, Down to Basics discussed the merits and demerits of Basic and its rivals. This month we'll be taking a closer look at Basic's structure and hopefully get a greater understanding of how it operates. First of all we should take a look at the heart of all computers, the microprocessor.

The microprocessor is the most important chip in a computer. If you've ever seen inside a micro, chances are that the largest chip in there would have been the microprocessor itself. It is also known as the Central Processing Unit, or CPU and this name helps you understand what it does.

The CPU is the chip which controls all the others and which actually does the work when you run your program. If a calculation needs doing, which happens hundreds of times every second, the numbers are brought from the memory chips into the CPU which does the work, and then places the answer back into a memory chip.

Whenever you see something moving across the screen in a game, it is the CPU which is controlling that movement. The way it's done is to put the character you wish to move at a point on the screen. Then, after a very short delay, erase it and put it slightly further along. If you keep doing this fast enough the object will appear to move.

The important thing to realise about the CPU is that, although it can work very fast (it could easily handle many thousands of long multiplications in less than a second), it can only do one thing at a time. So if your computer is playing a game of Pacman, the computer can't move that ghosts around the screen, make the sound effects and check to see what keys you're pressing all at the same time. Programmers get round this problem by making the CPU do each job for a short time in turn. If the program is well written, this should happen fast enough to give the impression that all is happening at once.

That about winds it up for this issue except to remind you that if you have any problems with the listings in *C&VG*, or just want to learn more about how the games work, drop Program Extra a line to *Computer and Video Games*, Durrant House, 8 Herbal Hill, London EC1R 5EJ.

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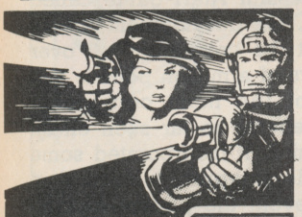

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JAPAN *the lan*

Japan was the only country in the world which had to mint more coins in order to satisfy the enormous demand created by the arcade boom caused by the original Space Invader machines. The company which created those first Invader machines made a huge killing while arcade centres and even Space Invader coffee houses sprung up like mushrooms. People queued for hours to play the Invaders.

All this led to the creation of more than 200 companies trying to cash in on the very lucrative arcade industry. This is a story of one such pioneer of the arcade video games, Namco. Virtually unknown in this country, Namco is the most exciting arcade company in Japan.

When the Space Invader boom began to wane, the game was quickly followed by the Galaxian. This development of the alien invader theme was an instant success. Galaxian was Namco's very first video game and since then the company have gone from strength to strength. Tom Sato looks at the Japanese video boom.

Once upon a time, Namco was a rather obscure company which manufactured small fairground rides which were placed on the top of department stores to keep the kids happy while their mums went shopping.

The turning point came when Namco bought up Atari Japan Inc. in 1974. Although Atari was the world leader in the video game industry at that time, it did rather badly in Japan due to lack of experience.

Despite some financial difficulties at the outset Namco went on to do some basic research into the American video games technology.

So it was not until 1977 that their first product, Galaxians invaded the Japanese arcades. The timing was just right. People were getting fed up with the original Space Invaders and wanted something new.

Galaxians did exceedingly well but their best seller was still a gleam in a hungry software experts eye.

When Namco released Pacman the company's profits rocketed.

The idea of Pacman was devised by one of Namco's software specialists. One day he was so hungry that he imagined himself eating a pizza. This train of thought led him to picture a pizza with a piece cut off, looking as if the bigger portion was trying to eat the smaller one. Then he thought to himself: "Why not write a game about eating?"

From this bright idea Namco's development team added various ideas such as the ghosts and the power pills and unleashed a little yellow monster on the world!

Contrary to the popular belief Pacman is Japanese; Atari merely holds the rights to produce the home computer and home video versions.

All in all the game took about 12 months to develop. The name Pacman derives from the Japanese word "paku paku" which describes the movement of the mouth when eating.

The reason for the great commercial success of Pacman — apart from the originality of the game — is attributed to the fact that Namco licensed two American companies to produce Pacman for the U.S. market.

Thanks to Atari, the U.S. market is about five times that of Japan and about 10 times that of Europe.

Namco licensed Midway to produce the coin operated arcade machines and Atari to sell the home video game versions of Pacman.

Atari splashed out on a national T.V. advertising campaign and soon Pacman became a household word. The sales of the Pacman cartridge can only be described as explosive! Namco earned millions from the royalties.

The reason why Atari sued Commodore and others over breach of copyright of Pacman is simple. While Atari paid millions to Namco, Commodore and the rest of the copycats didn't pay a cent.

But the licensing of Pacman didn't stop at the video games. Soon, there was Pacman sports gear and Pacman toys everywhere.

It is said that Namco earned more than three times as much from royalties generated by the Pacman character than from the actual video game! *Time* magazine commented, in April 1982, that Pacman's income will exceed that of the movie *Starwars*!

Apparently, one cornflake manufacturer put a Pacman picture on the packaging and the sales took off.

However, all is not well for Namco. In Japan, there are people who pirate arcade games. Although it may appear to be rather difficult to produce "clones" of sophisticated arcade machines, there are a number of technological pirates about in Japan.

Namco has no less than 20 full-time detectives investigating piracy, using sophisticated spying equipment to catch the pirates.

Last year, Namco developed the now hugely successful Atari game called Pole Position. The development of Pole Position cost the company well over three-quarters of a million pounds and has some of the most convincing graphic 3D effects so far seen on an arcade machine. It incorporated some custom made integrated circuits in order to prevent the pirates making "clones" using commercially available micro-chips.

It sounds incredible — but within two months, there were pirated Pole Positions available on the black market at half the price of the original!

This time Namco was determined to catch the pirates red handed so they sent out all of their detectives to monitor known secret laboratories and hide outs.

The whole operation came to a dramatic Hollywood style end when they tailed a truck believed to be on its way to pick up a consignment of illegally produced Pole Position machines.

They eventually reached a secret factory 1,000 miles away from Tokyo and apprehended several pirates and confiscated 20 "clones", renamed Top Position. Sounds like something out of *The Sweeney*, doesn't it?

So how do the pirates make these "clones"? As soon as an original arcade machine is released they get hold of one and disassemble it, obtaining photographs of the printed circuit boards and names of the chips it uses.

The custom-made chips are opened

nd of the rising clone

up and analysed using micro-photographic equipment. Once they work out how the chip works they then produce a circuit to do exactly the same thing.

This process is called "reverse technology" and the ironic thing is that much of Japanese industry started off using this technique.

The pirates who analyse the originals are quite skilled, and are sometimes engineers working for large computer manufacturers and moonlighting. They are equipped with mainframe computers and electronics equipment costing hundreds of thousands of pounds. They see creating a "clone" as a challenge.

They pass-on the information to other pirates whose exclusive function is to set up an overnight factory in a remote part of Japan and mass produce the "clones". The marketing is handled by other pirates who specialise in this field. The whole operation is master-minded by organised crime syndicates.

They regard arcade piracy as being safer than drug trafficking.

Namco has just released a sequel to Pole Position called Pole Position Pt II. It gives you choice of four racing circuits and the backgrounds are more detailed than before.

Most arcade players in Japan really go in for convincing backgrounds and in Pole Position Pt II, there is one circuit which has a multi-level crossing and a fairground with a big wheel and roller-coasters! Also the car crashes in a more realistic fashion. You see the car break up into bits while the wheels bounce away from the crash if you are unlucky enough to go off the road.

Just recently, two companies released laser-disc motor-racing games and it looks as if Namco could have been outsmarted by them.

Taito's Laser Grand Prix (*C&VG*, November) uses Laser vision which provides actual scenes from Fuji Speedway. The visual and sound effects are superb. Tazmi has a Pole Position-like game with no less than three screens to fill the whole of your field of view!

But one arcade fanatic commented that Namco always comes up with something really original. I think he is right. In 1984 I believe that Namco will release something extraordinary using laser technology.

The current trend in arcade games in Japan are sport simulations. There are now arcade games which feature anything from water-skiing to women's volleyball! It is very likely that there will be a convincing flight simulator game next year.

Another trend is towards micro computer software. Due to the fact that Sinclair's cheap micros never reached Japan and Atari's absence from Japanese home video game system market meant that the games software industry for home micro is relatively new in Japan.

Since there is a law in Japan to protect arcade games there is a lack of computer games converted from the arcade favourites. There is an awful lot of illegal stuff about, though!

Sega Enterprises — they made Frogger, Zaxxon and Buck Rogers, Planet of Zoom — have produced their own micro called the Sega 3000 to sell their original arcade games.

Namco too has joined forces with one of the leading software distributors called Dempa. Their first offering was, predictably, Pacman!

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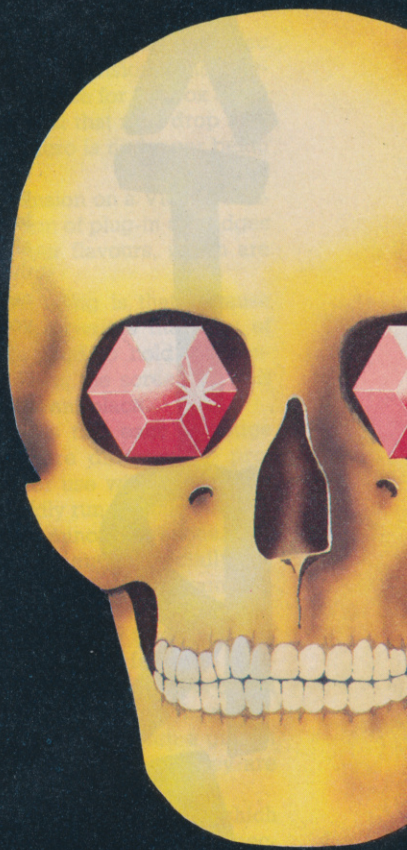

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COMMUNICATIONS

Communications means making your micro talk or listen to other computers in their own language. They communicate either over the airwaves at radio frequencies or over the telephone lines.

Each has its advantages. Radio communication is only one-way whereas telephone can be both. But long conversations on the phone can be expensive. If you want to read more about this subject, dig out November's issue of *C&VG* and turn to page 114.

If you want to receive Teletext on your micro, you'll need a BBC model B with a Teletext adaptor. This lets you receive Ceefax and Oracle, which are information services broadcast by the BBC and by ITV. You just plug your TV aerial into the back of the adaptor, and the computer will do the rest.

The adaptor gives you four channels of teletext information; BBC1, BBC2, ITV and Channel 4. You can find out about such things as what's on TV tonight, the latest world news, sports news and ITV also has a kids corner with jokes and the like. Teletext is like a big electronic newspaper. You can read its pages on your TV but you can't write back to it.

The other method of communication is over the telephone. This is what systems like Micronet 800 use. This way, the computer can send messages and you can also type back.

There are loads of computers which you can dial into and most of them are free except for the price of the phone call. However, these free bulletin boards, as they're called, run on different baud rates (no pun intended) to Micronet so unfortunately you can't use a Micronet adaptor to call them.

You can buy a 300 baud modem quite cheaply from various companies, like Maplin Electronics who supply units for the Dragon, Vic-20, Commodore 64, Atari and Spectrum.

I tested the Atari one and managed to dial into some local systems and also used Maplin's own service called Cashtel which allows you to order stuff from the Maplin catalogue via your computer by typing in your credit card number.

A lot of computer clubs run bulletin boards, and you can dial them up for computing news; you can also send messages to the club by typing at your computer. This is the two-way advantage gained by using the 'phone as opposed to the airwaves.

You can set up your own bulletin board with a Maplin modem, but you'll also need some software.

You will soon be able to buy a Micronet/Prestel type modem for your BBC micro from Acorn which has some better features than the Micronet package. But it's more expensive, and you'll still have to pay a fee to join Micronet if you want to look at their private areas on the database.

You can also buy slightly cheaper modems like the Micro-Myte which will not receive Micronet or other information systems, but will allow you to talk to your friend's computers, providing he or she also has a similar modem.

This way you can send each other programs or messages, but you'll have to phone him up first to tell him to switch his modem on!

The Micronet modems offer this person-to-person facility as well as normal Micronet use, but are slightly more expensive.

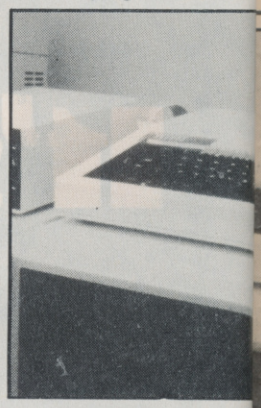
STORAGE DEVICES

When you finally decide that cassettes are too slow for your needs, you'll want to look for something faster. The best thing is a real disc drive which for micros will probably use 5.25" discs.

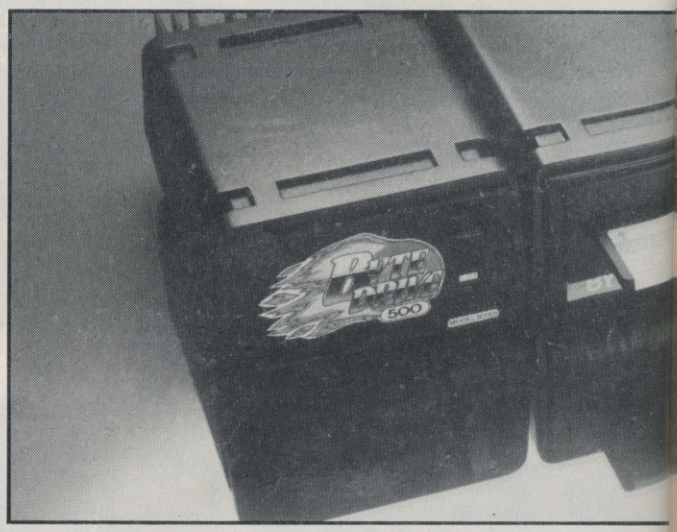
A cheaper alternative is a 3" drive which is available for many micros. You can buy a Byte Drive 500 3" system from ITL for about £250, and this contains a special cable to link the drive to your micro.

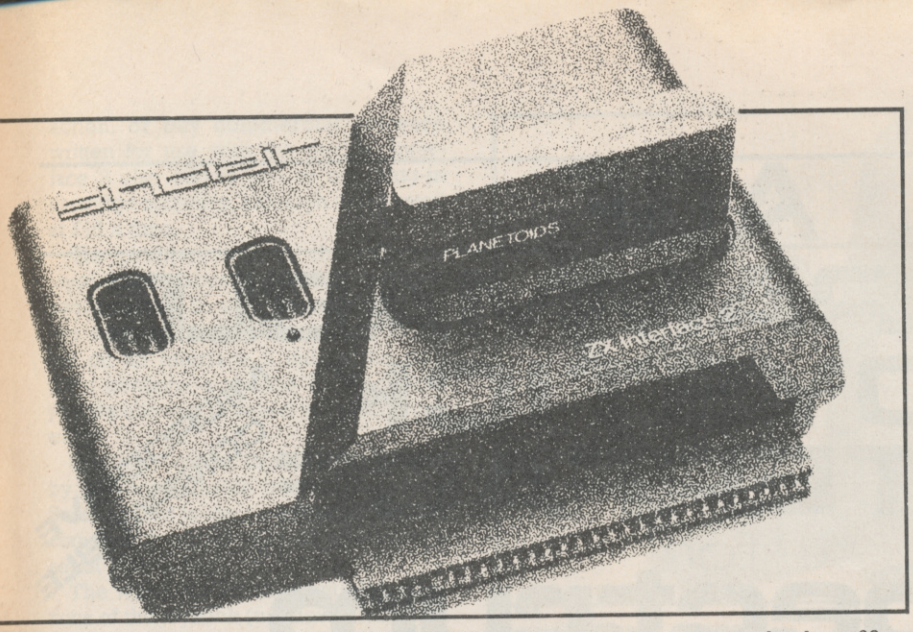
If you have two computers, or decide to change your machine, you just buy a new cable. Blank 5" discs start at about £1.50, but 3" systems use special car-

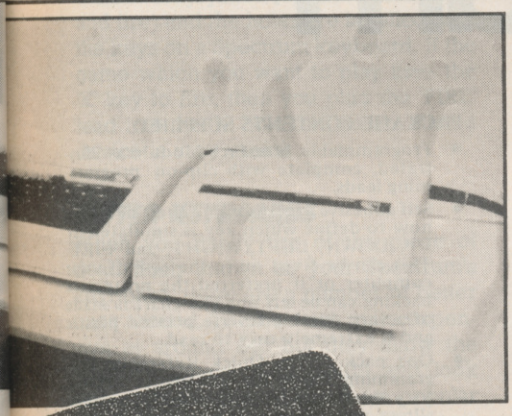
You can now fit two standard Atari-type joysticks to your Spectrum with an Interface 2. It plugs into the back of the computer, and also has a slot to take the new Sinclair software cartridges. The BBC (below) can now become a Teletext terminal with the new add-on from Acorn. As well as displaying pages of information, it can also store the data in memory and use it in its own programs.

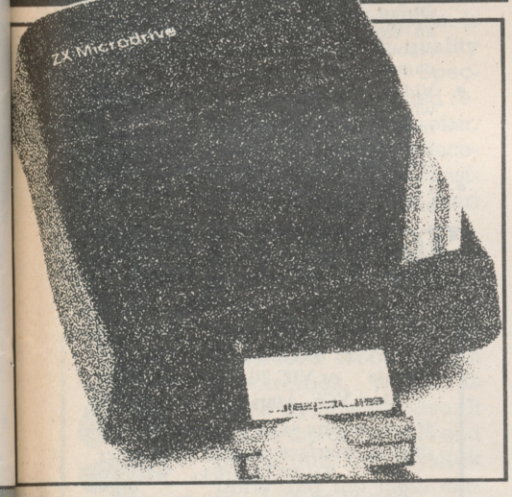


At long last, the microdrive has actually been launched. As expected, demand is still exceeding supply and it will be some time before you can just walk into Smiths and buy one. They're not really disc drives at all, just miniature cassette recorders. You can load a 16K program from a Microdrive in about 10 seconds.









The byte-drive 500 is a 3" disc drive from ITL. The small discs are enclosed in rigid plastic and currently cost over £5 each. The clever part is the cable which links the drive to the micro. This contains all the electronics, so if you change micros, you just change the cable but keep the same drive.

tridges which are currently about £6.

The Byte Drive 500 will soon be available for the Dragon, Spectrum and Commodore 64. It is already available for the Oric, BBC and Apple.

If you have a Spectrum, the official Sinclair way of progressing from cassette is the Microdrive. This costs £50 for each drive, but you'll also need an interface which is another £30. You can store between 85 and 100k on a Microdrive cartridge, and a 16k program will load in about 10 seconds.

Microdrives are fast, but they're not really discs. Inside a microdrive cartridge is a loop of high quality tape, and the drive itself is just a very accurate (supposedly) cassette recorder.

If you've got a BBC then you'll need a disc interface fitted, which costs around £90. ITL has no intention at the moment of producing one, so you'll have to use the BBC one.

MORE MEMORY

The size of the largest program which you can fit into your machine is governed by the size of the area of memory in which the computer stores it.

The problem is that although memory chips are now quite cheap, some micros still have very little RAM, as it's called. One of the first enhancements which a computer owner will make in such a case is a memory expansion.

The ZX81 although very popular has only 1k of RAM. (1k is about two screenloads of program.)

It's very easy to expand your ZX81's memory. You can buy a 16k RAM pack which just plugs into the back of the machine and costs around £30. You may have heard of the much-feared contemporary disease known as "RAM pack wobble", caused by Sinclair not putting the edge connector on their RAM pack in the right place.

This disease can be fatal to a program, as a slight wobble at the wrong time can erase a whole afternoon's typing. One cure is a blob of something sticky under the machine, although a less messy solution is to look to a different company. You can also get 64k RAM packs which allow for even more storage of data and programs.

Upgrades for the 16k Spectrum are available from Sinclair for £40, but you'll have to send your machine back to Clive, and you know how long that takes, don't you? Alternatively, you can buy a ZX81-like RAM pack which sits on the back of the machine, or some companies sell chips which you can stick inside, as long as you didn't really want the guarantee anyway.

If you're going to upgrade your Spectrum, check that the company's product will fit your particular machine. There are currently three different versions of the Spectrum in circulation and although they all look the same from the outside, there are some small variations inside which may make a difference.

Expansion for an Atari is easy; the memory comes in chunks of plastic which you install by removing the cover on top of the machine. Newer machines come with 48k but some old 400's still have only 16k. Your local dealer should be able to tell you how to improve this.

To expand a Texas TI99/4 or 4a you'll need a peripheral expansion box. This takes the form of a large aluminium crate about the size of the small freezer compartment in a fridge. (I don't know why, but everyone seems to measure the size of computers in relation to parts of fridges.)

Inside this you can then put disc drives, memory expansions and anything else. Retail price for the box alone was around £80 but that may drop now that the Texas micro is no longer being made.

Memory expansion on a Vic is peculiar. It is in the form of plug-in cartridges and comes in four flavours, which are 3k, 8k, 16k or 32k.

The annoying thing is that because the cartridge overwrites that part of memory which used to hold the contents of the screen, the screen RAM is moved to a different place.

The problem is that each cartridge puts it somewhere different, so programs written for use with an extra 3k will not necessarily run directly on a 16k machine without minor alterations. This is very inconvenient, especially for magazines who publish program listings!

If you're tired of having to do octopus impressions to play your favourite computer game a joystick interface is called for. This allows machines which normally have no provision for such a gadget to have one, and very useful they are too.

The most popular machine, which lacks a joystick interface, is the Spectrum, and there are now quite a few companies who will remedy this situation for you.

The official way is by use of the Sinclair Interface 2. This costs just under £20 — you get 5p change! — and allows two standard Atari-type controllers to be used. You can then write your own games using the joysticks to control the

AGF PROGRAMMABLE JOYSTICK INTERFACE for Spectrum or ZX81

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MICRODRIVE COMPATIBLE

ABOUT OUR INTERFACE

The AGF Programmable Joystick Interface is a unique design offering the use of any Atari-compatible joystick with absolutely all software, whether it is cassette or ROM cartridge, with the Sinclair Spectrum or ZX81.

The hardware programmable interface requires no additional software and accurately replicates the keys of the computer in a manner which is responsive to absolutely *ALL* key reading methods, both BASIC and Machine Code.

The interface does not interfere with key operation and can therefore be used simultaneously with the keyboard.

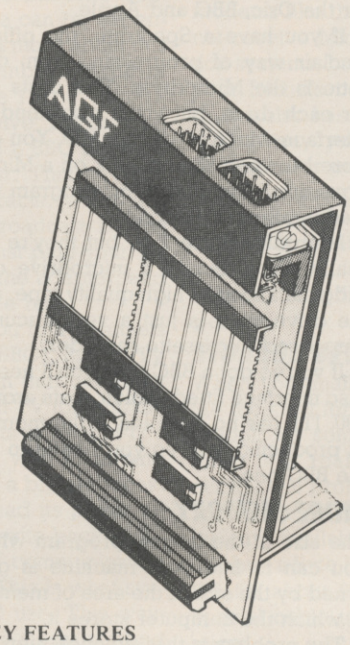
There is no need to remove the interface once fitted as the rear extension connector will accommodate further expansion, i.e printers or RAM packs etc. This important feature avoids excessive wear to the expansion port.

The key replication principle pioneered by AGF means that your own programs can use eight directional joystick movement by utilising simple key reading BASIC.

Two joystick sockets are provided which share the same keys, for use with the majority of two player games. Several interfaces may be used on the same computer for multiple joystick applications.

The interface is programmed by a two digit code, which is looked up on a programming chart supplied, for each direction and firing button. The two numbers are then selected on a pair of leads which are clipped onto appropriately numbered strips on the interface.

Once configured this can be marked on a Quick Reference Programming Card for storing with the game. As the programming is *not* power dependent the interface retains the last configuration made and can be immediately used when next switched on.



KEY FEATURES

- ★ Programmable design gives TOTAL software support.
- ★ Accepts Atari, Competition Pro, Wico, Starfighter, Quick Shot, Le Stick etc.
- ★ Rear extension connector for all other add-ons.
- ★ Free demo program and instructions.

PACKAGE CONTENTS SUPPLIED

- Programmable Interface Module as illustrated, complete with clip-on programming leads.
- Self adhesive programming chart detailing how to define which key is simulated by UP, DOWN, LEFT, RIGHT, and FIRE. This can be fixed on to the case of your computer or if preferred the protective backing can be left on. The chart is made of a very durable reverse printed plastic and is extremely easy to read.
- One pack of ten Quick Reference Programming Cards for at-a-glance setting to your games requirements. The card allows you to mark the configuration in an easy to read fashion with space to record the software title and company name.
- Video Graffiti demonstration program which is written totally in BASIC to illustrate how all eight directions and fire can be read. This is also a useful high resolution drawing program.
- 12 months guarantee and full written instructions.

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QTY	ITEM	ITEM PRICE	TOTAL
	PROGRAMMABLE INTERFACE	33.95	
	JOYSTICK(S)	7.54	
	PACK(S) QUICK REFERENCE CARDS	1.00	
ONE	VIDEO GRAFFITI	FREE	
ZX81 ☐ ZX SPECTRUM ☐ Please tick		FINAL TOTAL	

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action, or buy commercial software written for use with the device. Interface 2 also allows you to use plug-in cartridge software, although these retail at £15 a time.

The problem with all the different joystick interfaces is that they use their own systems. So a program written for use with a Kempston joystick will not run on an Interface 2 unless the program contains a routine for each and you are allowed to select which one you want.

One way round this predicament is by a programmable joystick interface. Such a beast is the one from AGF. This comes with a grid of small holes and a set of five wires.

The wires are labelled with the functions of the joystick (up, down, left, right and fire) and the holes are labelled with the keys on a Spectrum keyboard. If the game which you want to play uses the 'K' key to fire, then you plug the 'FIRE' lead into the 'K' hole and so on. Such a device is very useful.

BETTER KEYBOARDS

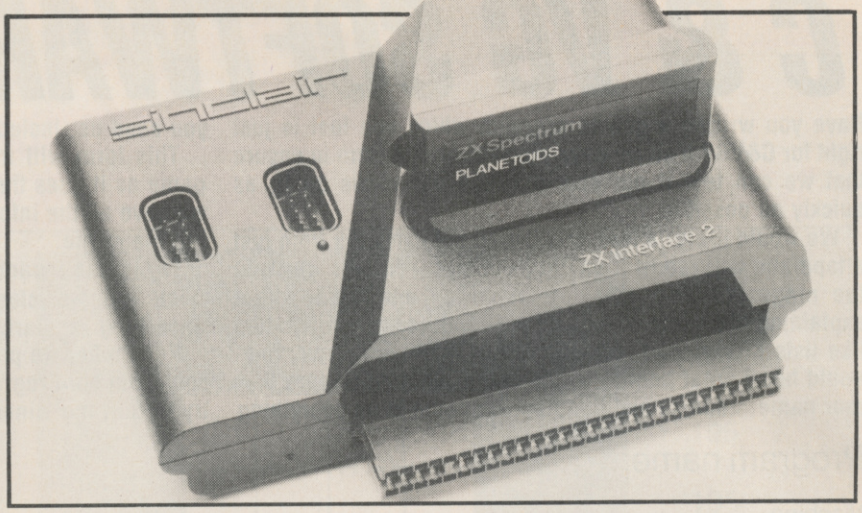
When you finally tire of the piece of dead flesh known as your Spectrum's keyboard, there are a number of better ones around. The best are quite expensive at around £40 but they allow the whole machine to fit inside and look rather smart. One of the most popular around is made by Fuller. Kempston is also about to launch a high quality keyboard for the Spectrum, as demonstrated recently at the ZX Microfair.

You'll also find replacements for the touch-sensitive keyboard of the Atari 400 from about £65.

If you have an Atari VCS and feel like getting into computing, you can now buy an add-on keyboard from Vulcan Electronics, which is made by Spectravideo. It sits on top of the VCS and plugs into the joystick ports and the main cartridge slot and you can then program your VCS in Basic. It costs £50.

Mattel Intellivision owners can also do the same to their machine. Mattel offers a similar device, as well as a music keyboard to enable you to compose music on your machine. I don't reckon Bach would think much of it, but it's not bad.

EXTRABITS!



SOUNDS AND SPEECH

If your idea of a good evening is being locked in a quiet room with a micro, then you could always get more friendly with it by talking to it or having it talk to you. But before those nice little men in white coats come to take you away, let me explain.

If you have a Pet, Vic, 64, Spectrum, ZX81 or BBC and need someone to talk to you then you could always try a Chatterbox. This costs £49 from William Stuart systems and you can program it to say anything you like. From the same company comes Big Ears which, for another £49, reverses the process and allows you to speak to your computer.

Say the word through the microphone a few times, and the machine will then remember it. If you then say it again, it should recognise what you're saying.

If it's a Spectrum you've got then the Currah microspeech is another possibility besides a Chatterbox. It works on the same system and sells for under £30.

BBC owners can also choose the official Acorn speech system, which is a computerised version of Kenneth Kendall. Personally I can just about recognise him, but many say that it might just as well be Moira Stuart. (In fact, I wish it was.)

If you prefer noise to plain speech then there are a couple of units available to improve the sound of a Spectrum by providing it with the same sound chip as the BBC and Oric.

WHAT'S LEFT OVER

Finally, we come to the rest of the oddments which space did not allow separate headings for.

If you own an Aquarius, then this year should see the introduction of the home controller unit. This plugs into the machine and allows you to control household appliances by using special plugs which go into the wall and receive messages from the computer. Such a system is also planned for the Electron.

If you have an Atari VCS then you may already know about the super expander. This lets you load games from cassette, and also improves the quality of the graphics slightly.

Printerface is a mixture of interface and printer and is a device to let you link a printer to a micro. DAMS office systems supplies an IEEE cartridge to allow a Vic or 64 to connect to any Commodore printer (or disc drive for that matter.)

The Spectrum will only work with a ZX printer, but you can use the RS232 connection on an Interface 1 to link a large range of printers. If you have a Centronics-type printer then Kempston will supply you with a suitable interface for a Spectrum.

If you own a computer other than a Sinclair machine but would be perfectly happy to use a cheap (£40) Sinclair printer, you can get a suitable interface for many popular micros, including the BBC, Dragon and Vic, from Microtanic Computer Systems of London.

LIGHT SENSORS

Another way of controlling a game is with a light sensing device. Usually mounted in a pen-like barrel (and, therefore, called a light pen) these allow you to draw patterns on the screen as though it were a piece of paper.

Recently launched is the Light Rifle from Stack Systems of Bootle, Merseyside. It comes with three demo games where you have to shoot at targets on screen, just like those old TV game machines, but these games are better as they rely on all the facilities of the micro. You can also write your own shooting-time programs. The light rifle costs just under £30 and versions are available for the Spectrum, Vic and 64.

C & VG SOFTWARE FORM

Have you written a games program which you feel is just right for C&VG? If so we have come up with a form to ensure that we can test it out and give you our views on it, as quickly as possible.

We would prefer a tape and listing but can work from just a tape and will return it to you if it doesn't find its way into the magazine. We will also need an additional sheet explaining the game and its theme. And any documentation like lists of variables or how certain routines are working, would be of great help to beginners. Please make sure that your name, address and the program name is on everything you send us, including the cassette itself.

This form will merely help us to keep a check on your game as it goes through our testing process and make sure we have all the information we need to present it properly in the magazine.

If you don't want to cut up the magazine, we will accept photocopies or close copies of this page. This form will be appearing regularly in C&VG issues from now on.

Remember we pay £10 for each listing published and you could win our Programmer of the Year Contest where we will try to turn the winner into a best-selling games author.

Program name: .....

Machine make: ..... Model .....

Other models it should run on: ..... Number of K needed to run it: .....

Other equipment (joysticks, Extended Basic, add ons, etc.) needed to run it: .....

Author's Christian name: ..... Surname: .....

Address: .....

.....

..... Tel: ..... Date: .....

Type of game: (If original please say so) .....

Loading instructions: .....

Game instructions: (If not included in the listing) .....

.....

.....

Office use only

Date received: .....

Acknowledgement sent: ☐

Name of evaluator: .....

Date sent out: .....

Date due back: .....

Needs to be returned to author for alterations: ☐ Date sent: .....

Due to be published in ..... issue of magazine.

Evaluator's comments

Good enough to publish ☐

Needs some tidying up ☐

Not worth publishing ☐

Same game already published on this micro ☐

Wouldn't load ☐

GRAPHICS

By Garry Marshall

MAKING THE MOST OF YOUR 64

Over the next few issues, I shall be looking at the graphics capabilities of the Commodore 64. This new computer has very impressive graphics facilities, which I'll be helping you make the most of.

I'll begin by looking at the way that user-defined characters are created. In fact, the entire keyboard is "soft" in the sense that it is possible to redefine the character that is associated with every key.

This is possible because the Commodore 64 really does have 64k of random-access memory. All the ROM, including the Basic ROM, the operating system ROM and the character generation ROM, is covered by RAM, so that ROMs can be switched out and the range of characters that they provide supplied instead by RAM.

Because of this, the characters that are stored in the character generator and printed from the keyboard can be copied from the character generator ROM into RAM so that all the characters are available when this ROM is disabled.

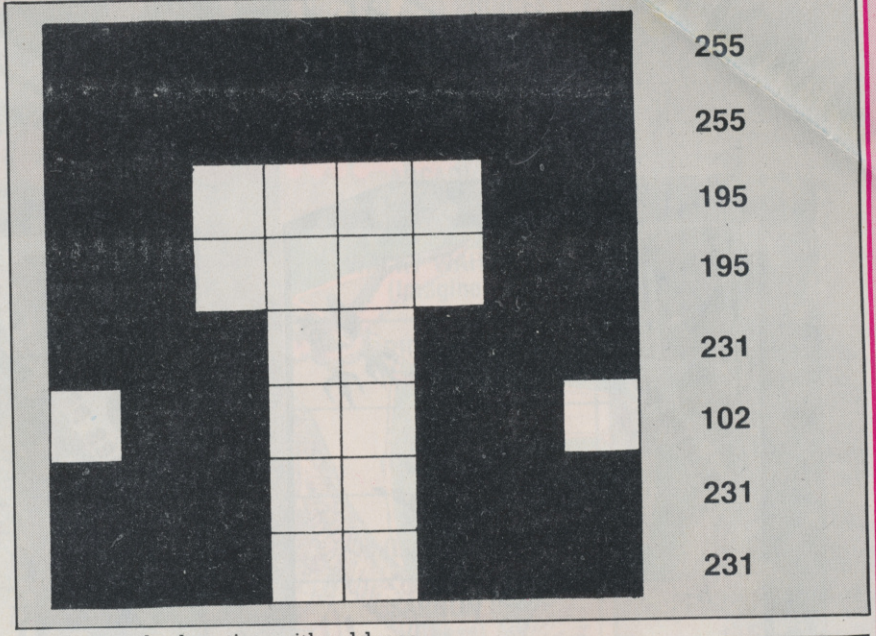
Then we can change the characters associated with any key as we wish. To write the program to do this, all we need to know is the addresses of the registers that control the operations involved.

The characters themselves are based on an 8x8 dot matrix. Each dot can be on or off, and the resulting character is defined by using a 1 for a dot that is on and a 0 for a dot that is off. Then each row of the character is represented by the decimal equivalent of the binary number for the whole row. This is illustrated in figure 1.

In this way, we could design a completely new style for each letter of the alphabet or a set of graphics characters for a particular application.

The program I shall give allows the character in the illustration to be assigned to the key associated with any letter of the alphabet to that, when that key is pressed, it gives this character rather than the letter.

The program starts by setting the contents of location 53272 to make the video chip take character descriptions from the area of RAM starting at the location with address 12288, rather than from the character ROM.



Line 20 prevents this area of RAM from being overwritten by a Basic program. Then lines 30 and 40 permit the character ROM to be assessed so that its contents can be copied into RAM with lines 50 to 70.

Lines 80 and 90 then return the computer to its original state. Lines 100 and 110 request that a letter is entered from the keyboard, accept an input and check that it is a letter, before allowing control to pass to the remainder of the program which assigns the character in the illustration to the key for that letter.

If you run the program, you will notice that all occurrences of the letter on the screen are replaced by the graphics character straight away. This is because the screen refresh circuitry now refers to the area of RAM prescribed by the program rather than the character ROM for character descriptions. Also, of course, pressing the key for the letter given to the program now gives our character rather than the letter itself. The program can be used as the basis of a scheme for changing the characters associated with any and every key on the keyboard.

More on the Commodore 64's interesting graphics capabilities in the next issue.

The program is:

```
10 POKE
   53272,(PEEK(53272)
   AND 240) + 12
20 POKE 52,48: POKE
   56,48: CLR
30 POKE
   56334,PEEK(56334)
   AND 254
40 POKE 1,PEEK(1)
   AND 251
50 FOR K=0 TO 2047
60 POKE K+12288,
   PEEK(K+53248)
70 NEXT K
80 POKE 1,PEEK(1) OR
   4
90 POKE
   56334,PEEK(56334)
   OR 1
100 INPUT "LETTER";
   L$
110 I=ASC(L$)-64: IF
   (I<1) OR (I>26) THEN
   100
120 FOR N=0 TO 7
130 READ X: POKE
   12288+8*I+N,X
140 NEXT N
150 DATA 255, 255, 195,
   195
160 DATA 231, 102, 231,
   231
```

for the COMMODORE 64

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CHART TOPPERS

	SPECTRUM	ZX 81	VIC-20	ATARI 400/800	
1	ATIC ATAC (Ultimate)	KRAZY KONG (PSS)	WIZARD AND PRINCESS (Melbourne House)	POLE POSITION (Atari)	1
2	LUNAR JETMAN (Ultimate)	3D MONSTER MAZE (New Generation)	CRAZY KONG (Interceptor)	DONKEY KONG (Atari)	2
3	ANT ATTACK (Quicksilva)	FLIGHT SIMULATION (Psion)	ARCADIA (Imagine)	DIAMONDS (English Software)	3
4	MANIC MINER (Bug Byte)	FOOTBALL MANAGER (Addictive Games)	WACKY WAITERS (Imagine)	ZAXXON (Datasoft)	4
5	CHEQUERED FLAG (Psion)	3D GRAND PRIX (Artic)	GRIDRUNNER (Llamasoft)	DIG DUG (Atari)	5
6	VALHALLA (Movisoft)	MAZE DEATH RACE (PSS)	SKYHAWK (Quicksilva)	COMPUTER WAR GAMES (Thorn EMI)	6
7	COOKIE (Ultimate)	HANG GLIDER (Suncom)	MATRIX (Llamasoft)	SUSPENDED (Infocom)	7
8	ZZOOM (Imagine)	ZX CHESS (Artic)	SARGON II (Chess)	FORT APOCALYPSE (Synapse)	8
9	TRANS AM (Ultimate)	SEA WAR (Panda)	BEWITCHED (Imagine)	NECROMANCER (Synapse)	9
10	SCRABBLE (Psion)	PROTECTOR (Sinclair)	GORF (Commodore)	LEGGIT (Imagine)	10

	COMMODORE 64	DRAGON 32	BBC B
1	THE HOBBIT (Melbourne House)	PETTIGREW'S DIARY (Shards Software)	THE HOBBIT (Melbourne House)
2	RADAR RAT RACE (Commodore)	MINED OUT! (Quicksilva)	MISSILE CONTROL (Gemini)
3	ARCADIA (Imagine)	THE KING (Microdeal)	SALOON SALLY (Psion)
4	CRAZY KONG (Interceptor)	TALKING ANDROID ATTACK (Microdeal)	MR MEN (Mirrorsoft)
5	PURPLE TURTLES (Quicksilva)	CUTHBERT GOES WALKABOUT (Microdeal)	SNOOKER (Visions)
6	AQUAPLANE (Quicksilva)	GRIDRUNNER (Salamander)	SNAPPER (Acornsoft)
7	3 DEEP SPACE (Postern)	FROGGER (Microdeal)	PHILOSOPHERS QUEST (Acornsoft)
8	METAGALACTIC LLAMAS (Llamasoft)	NIGHT FLIGHT (Microdeal)	HUNCHBACK (Ocean)
9	SUPER DOGFIGHT (Terminal Software)	CUTHBERT IN THE JUNGLE (Microdeal)	737 SIMULATOR (Salamander)
10	CAESAR THE CAT (Mirrorsoft)	LOST IN SPACE (Salamander)	KILLER GORILLA (Micropower)

Welcome to our revamped Charts page. The page which tells you just what games are the tops among games players everywhere. This issue we introduce three new computers, the Dragon, Commodore 64 and BBC B, to our chart rundown.

We reckon that these charts give you, the games player, a true reflection of the best value for money games around — and like our Hall of Fame — we hope they give games players a guide to what's best to buy from among the groaning shelves of software in your local computer shop.

The Hobbit, just converted for the BBC and the Commodore 64, has gone in at number one on both machines. Diamonds, from English Software, is the first home-produced game for the Atari to make any impression on our charts. It's at number three already.

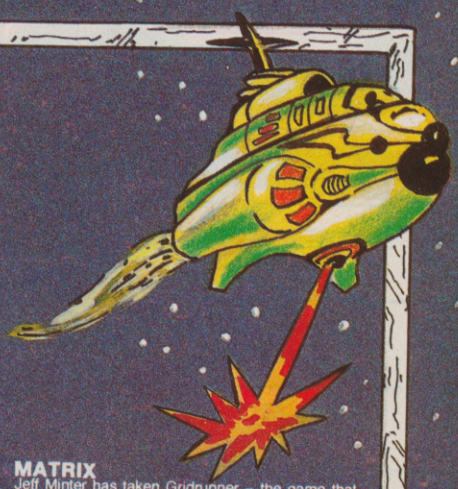
For the first time ever, one company dominates the Spectrum charts with games at numbers one and two. The company is Ultimate and the games are Atic Atac and Lunar Jetman.

There're lots of great games bubbling under the charts too. Watch this space for further information!

METAGALACTIC LLAMAS BATTLE AT THE EDGE OF TIME

A fast and original game for the unexpanded VIC. Challenging and colourful, with good sonics and a unique game action and design, this promises to be the most exciting new 3.5K VIC game since the introduction of GRIDRUNNER nearly a year ago.

£5.50



LASER ZONE

Experience Laser Zone – an utterly NEW totally ORIGINAL masterpiece of Video games design. Learn to control two spaceships at once. Feel the EXHILARATION as, after long hours of practice, you control the two ships so that they function as a smooth, co-operative team! Feel the raw POWER as you lunge for the electro button and BLAST your enemies into expanding clouds of SPACE JUNK!! Feel the humiliation as a carelessly aimed BLAST slams into the side of your last remaining ship!! 8K expansion required.
Available for Commodore 64 **£7.50**
and VIC-20 **£6.**

MATRIX

Jeff Minter has taken Gridrunner – the game that topped bestseller charts in USA and UK – and created an awesome sequel.
Graphically superb, it features multiple screens, new aliens and attack waves, mystery bonuses, renegade humanoids, deflexor fields, diagonal tracking, countdown/panic phase and much, much more . . . Packed into 20 mind-zapping zones and accompanied by incredible sonics.
8K expansion required.
Available for Commodore 64 **£7.50**
and VIC-20 **£6.**

HOVER BOVVER

A totally original arcade game for C64 featuring outstanding graphics and a sound track created by a professional Piano Wizard. Gordon Bennet has borrowed his neighbour's Air-Mo lawnmower. Mow your way through as many of the 16 lawns as you can before the pursuing neighbour retrieves his mower. Set your dog onto the neighbour to help you out of tight spots and don't annoy the gardener. Try not to plough through the neat flower beds or overheat your mower!

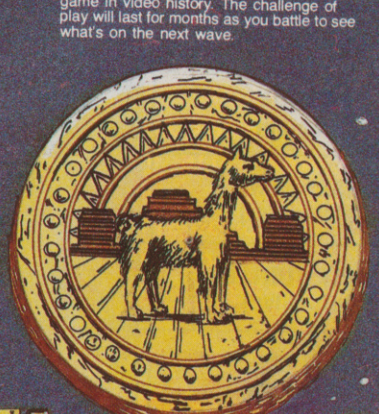
£7.50

ATTACK of the MUTANT CAMELS

Planet earth needs you! Hostile aliens have used genetic engineering to mutate camels from normally harmless beasts into 90 foot high, neutronium shielded, laser-spitting death camels!! Can you fly your tiny, manoeuvrable fighter over the mountainous landscape to weaken and destroy the camels before they invade the humans stronghold! You must withstand withering laser fire and alien UFOs. Game action stretches over 10 screen lengths and features superb scrolling, scanner 1/2 player actions and unbelievable animation! Play this game and you'll never be able to visit a zoo again without getting an itchy trigger finger! Awesome m/c action!
Available for
Commodore 64 **£7.50.**

REVENGE OF THE MUTANT CAMELS

At last the long awaited sequel to Attack of the Mutant Camels is available. You are controlling a ninety foot high, neutronium shielded, lazer spitting death camel; leading a rebellion against your evil Zzyaxian overlords. The game features beautiful smooth scrolling graphics and no less than 42 different attack waves, more than any game in video history. The challenge of play will last for months as you battle to see what's on the next wave.



GRIDRUNNER

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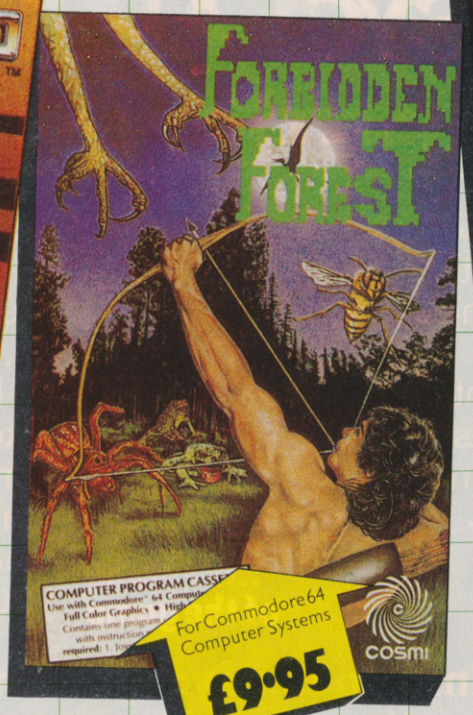

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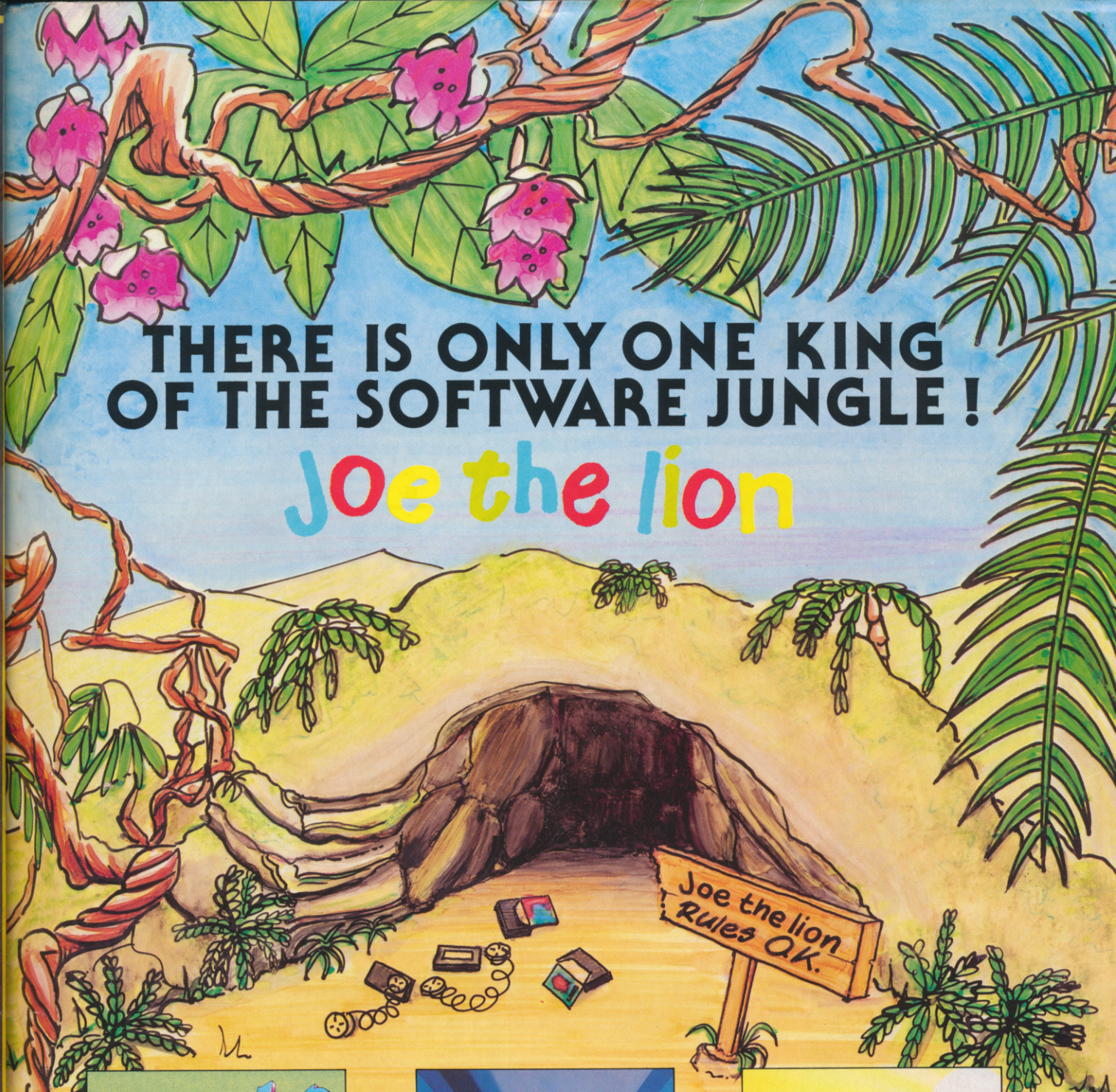

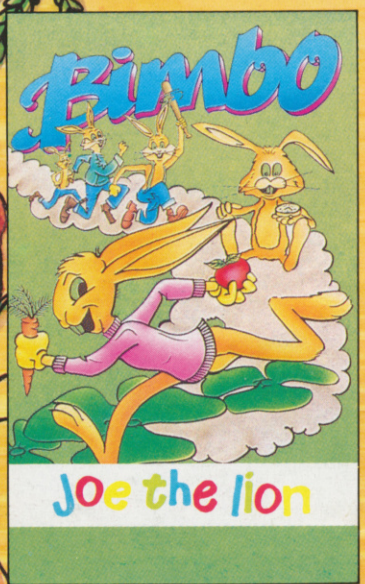

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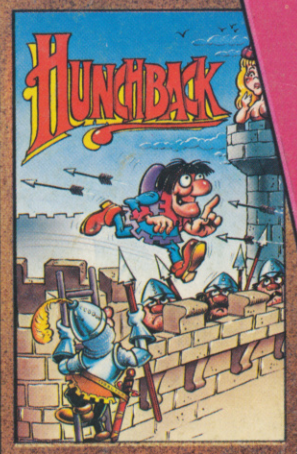

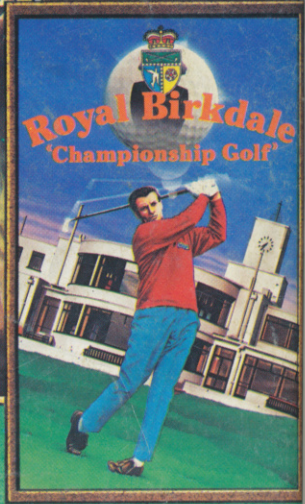

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